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THE PSYCHIATRIC QUARTERLY

SUCCESSOR TO THE STATE HOSPITAL QUARTERLY

Prevention of Mental and Nervous
The Role of Psychoanalysis in the Prevention of Mental Diseases
Psychiatry in the Prevention of the Functional
A Visit to Professor Foerster's Clinic in Breslau: Observation of His Treatment of
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THE PREVENTION OF MENTAL AND NERVOUS DISEASES *

BY B. SACHS, M. D.

The average practitioner, if asked what can be done to prevent the development of nervous and mental disorders, would greet the question with a derisive smile; and even the neurologist, with the exception of a very small number who have given especial study to the subject would answer, "Little enough can be done." As a matter of fact, this is hardly true.

In the attempt to prevent, or at least to curb the incidence of nervous and mental disorders throughout life, several factors of prime importance are to be considered: First, sound heredity; second, proper protection of the mother during pregnancy, and all possible care and skill at the time of the delivery of the child; third, sensible parents who have vision enough to guide the child carefully through the first years of life; fourth, rational school training, careful supervision during the adolescent years, the avoidance of sexual and alcoholic excesses, the avoidance of syphilitic infection. The acute infections of the central nervous system will present a special problem. These general causes apply to the problem of the avoidance of both organic nervous diseases and of mental disorders.

In the matter of a "sound heredity"—it may be suggested that individuals who are afflicted with some form of transmissible disease, above all things, suffering from marked specific infections, and those known to come of families in which there is a definite strain of mental afflictions, should not marry; and if they do marry, the prospects of a normal progeny would be improved if such individuals would at least be mated with those coming of known healthy stock. And above all, in families in which there is a distinct hereditary taint of mental or nervous disease, there should be no intermarriage.

The health of the mother during pregnancy is a matter of vital importance, whereas some definite evidence has been gathered as to the effect of direct trauma on the development of the fetus it is

* Contribution to a discussion at the New York Neurological Society, March 6, 1928. This subject will be treated more fully by the author in a chapter of the book on "Prevention of Disease" soon to be published by the Public Health Relations Committee of the New York Academy of Medicine.

difficult to give full statistical evidence, but the history of persistent worry, of neglect, of great emotional disturbances, of malnutrition, of renal diseases in the mother, is so frequent in the histories of children suffering from arrested mental development, from cerebral and spinal disorders, that it will be well to urge upon the prospective mother that her own physical condition while she is carrying the child will have the greatest possible effect upon the development of her baby.

Elsewhere[1] the present writer has insisted upon the importance of the proper physical care of the infant in the very first months of life and the sensible training and disciplining of the child in the earliest years of life, and the important bearing that such training has upon the development of the normal child. Although fuller detail will be given later on, it may be stated at the outset, and in a general way, that many of the neuroses and psychoses of later life could be prevented if the child in its earliest years were guided sensibly with due regard to the emotional development of the child, and with special thought to the development of the character of the child in youth. Further evidence of the importance of the factors mentioned above will be given when we proceed to a detailed consideration of the prevention of the various forms of nervous disease.

Diseases of the New Born

Beginning with the consideration of the organic forms of nervous diseases, we come first of all to diseases of the new born. And here we must differentiate between diseases of ante-natal origin and those due to difficulties during labor. Of course all strictly hereditary forms of disease may be thought to be ante-natal in origin, but in addition to this more or less vague conception, simply remember that the fetus itself is subject to various forms of disease. Soluble toxic states may be diffused through the womb of the uninjured placenta. A minute, focal injury in the placenta (according to Edgar) may permit the passage of vast numbers of microorganisms. For this reason it is most important that the mother, during pregnancy, be guarded against every form of infectious disease so far as possible. It is now fairly well established that lues is transmit-

1. Sachs and Hausman—Nervous and Mental Disorders, Etc. Chapter XXXI. Hober & Co., N. Y., 1926.

ted directly through the mother (positive Wassermann reaction in apparently healthy mother), and not indirectly through the father. It is easy to account for the fact that the mother is not infected, or re-infected by venereal ulcers on the lips of a suckling babe. Therefore, when there is the suspicion of lues in husband or wife, thorough specific treatment should be given and exacted before conception takes place, or at least during the earlier period of pregnancy. From the social point of view, it is fortunate that active lues often leads to miscarriages or to the death of the fetus in utero. Were it not for this circumstance, hereditary lues would play a far more pernicious role than it really does. As a matter of fact, in a large neurological experience, hereditary lues is a relatively rare etiological factor. Congenital tuberculosis is a little more common, but so far as nervous disorders go, it is also relatively rare, but since it does occur now and then the only safeguard would seem to be that in a frankly tuberculous mother, conception is not advisable and when it does occur under these circumstances, the question arises whether pregnancy should not be interrupted. There is always the fear of coming into conflict with the law, but every honest physician of large experience will grant that much misery could be avoided if after due conference with another colleague, the honest endeavor would be made to prevent the birth of a child that is destined to be afflicted with one or the other of these serious constitutional disorders.

It has been claimed, but not definitely proved, that poliomyelitis and even encephalitis lethargica may be developed in utero. For this reason it is wise to keep the pregnant mother so far as possible out of reach of either disease. In this respect the judgment of the family practitioner is of the greatest value. Just as he is also to be impressed with the importance of safeguarding the mother against premature delivery. Children born prematurely, especially those born in the seventh and eighth months, are prone to serious cerebral disorders (so-called Little's Disease for instance).

As for the diseases due to conditions during labor, a very solemn warning must be given. Obstetrical and general medical doctrines have never come to grips on this very important point. Rightly enough the obstetrician or the physician supervising a confinement has far more thought of the mother than of the child. Rightly

enough the mother should receive first consideration, but obstetrical theory does not take sufficient cognizance of the actual injury inflicted upon the child and often affecting the child's entire life, by improper obstetrical methods at the time of delivery. Many years ago Sachs and Peterson showed that tedious labor was more disastrous to the child than is instrumental delivery. Prolonged compression of the skull, prolonged dry birth, unskillful instrumental delivery, are responsible for many infantile cerebral palsies, especially for the monoplegia, the hemiplegia and the double hemiplegias. There is a tendency at the present day to minimize the importance of these factors. Allowing for the fact that the case may have been slightly overstated and as F. R. Ford has recently shown, that the cerebral diplegias are not as frequently due to birth injuries as was supposed to be the case, the preponderant weight of evidence is still in favor of the enormous harm that can be done to the skull and brain of the child by improper obstetrical manipulations and I would rather exaggerate this point than to lessen the responsibility of the obstetrician and the family physician in this matter of prompt and safe delivery of the child. That first-born children are the most frequent victims of cerebral birth palsies is a forcible commentary upon the effect of "prolonged compression of the skull." If the physician is reminded of the fact that the occurrences immediately before and during the delivery may result not only in various forms of paralyses but that it may also lead to something that is far worse, to chronic epilepsy, he will realize to the fullest extent his obligation toward the child that he helps to bring into the world.

The "obstetrical palsies" are surely among the avoidable diseases. Without wishing to criticize the medical attendant too severely and surely with no desire to intimidate him, there is no harm in reminding him that the brachial plexus of an infant consists of delicate strands, that undue traction upon the arm or arms should be avoided. While the lumbo-sacral plexus is not so easily lacerated, traction upon the lower extremities does occasionally give rise to serious palsies and lately Crothers and Putnam have shown that even serious cord injuries may result from improper manipulations at birth. Their statistical evidence is interesting. In a large series of cases there were 26 definite "cord cases", while the uncompli-

cated brachial plexus injuries numbered 216, and the cerebral palsies of birth origin were 260. These figures may be subject to all sorts of errors as the authors themselves allow, but they support the wisdom on the part of the obstetrician of avoiding undue traction upon the lower extremities as well as upon the upper. While we have a far more favorable impression of the safety of forceps delivery, passing allusion must be made to the occurrence of facial paralysis due to compression of the peripheral portion of the nerve by the blade of the forceps. Although this is a recoverable condition, in many instances it is surely to be classed among those that may be avoidable.

The modern obstetrician has so often been accused of undue haste rather than of delay, that it is just as well to state that so far as present evidence goes, the child seems to be none the worse for haste. Summing up this especial division of our subject, it is evident that much could be accomplished in the prevention of the development of infantile palsies, of idiocy, and of epilepsy, if the attention of the attending physician or obstetrician were riveted a little more upon the condition of the child and not too exclusively upon the fate of the mother.

The Infectious Diseases of the Nervous System

Many of the infectious diseases of childhood are apt to have neurological sequelae, but we are not concerned with these as much as we are with the few infectious diseases that have a special predilection for the central nervous system. Among these are acute anterior poliomyelitis (infantile spinal paralysis) occurring most frequently in children, but also as we have discovered to our sorrow in late years, often enough in adults; epidemic cerebro-spinal meningitis, epidemic encephalitis (encephalitis lethargica) and finally tubercular meningitis. In the prevention of these acute infectious diseases, little attempt was made to isolate those afflicted with disease since the danger of infection was not supposed to be great. Epidemics within recent years have taught us that it is wise to separate children and adults suffering from these forms of disease in spite of the fact that in several of the diseases mentioned, the actual infective organism has not yet been definitely discovered. Isolation for a period of one month has been suggested in the case

of infantile spinal paralysis and this same period would be a safe one to establish with regard to the other epidemic diseases. Medin showed very conclusively that the schoolhouse was the source of infection from which the cases seemed to radiate and for that reason it is wise not only to isolate children in the family, but to close schoolrooms and schoolhouses for a few weeks if one or more cases of these infective disorders have occurred in them. In our own hospitals in this city, during epidemics of encephalitis lethargica and of poliomyelitis very few cases have occurred proving the transmission of the disease. Now and then nurses and physicians in attendance have been stricken down with the disease in question. Although the evidence is not conclusive, that the disease was actually contracted in the wards, there is sufficient reason to institute isolation of the patient whenever it is at all possible. While we are careful to avoid therapeutic suggestions, prevention would seem to justify the remark that the early and proper care of the patient suffering from any of the infectious diseases of the central nervous system, plays an important part in the restriction of the sequelae which will often be far more disastrous than the original disease. In the way of prevention, it is important to prolong the bed period until every vestige of the inflammatory process has disappeared and to guard the patient by proper massage and physical manipulations against the development of contractures and chronic paralytic distortions. For detail the physician must consult special neurological text books. Whether anything can be done to counteract the disastrous sequelae of epidemic encephalitis is a matter that must be left to further research.

Syphilitic Infections of the Nervous System

In the earliest pages of this article attention was called to hereditary lues and to the duty of the parent with a syphilitic taint, toward the unborn child. Syphilis, may, however, be acquired at any time of life. In childhood syphilitic infection is relatively rare, but every physician recognizes the importance of safeguarding the infant against wet nurses who may be diseased (a positive Wassermann reaction will exclude a certain number), and against all children's nurses who are certain to come into intimate physical contact with their wards. Syphilis is surely a protean disease but it appears to

have especial predilection for the central nervous system. Fordyce, Wile and Stokes, Cannon and a number of reliable investigators have shown that there is distinct evidence in many cases of involvement of the cerebro-spinal fluid within the first year after the initial infection. Taking the lowest estimate, 25 per cent of all syphilitics develop neurosyphilis; 73 per cent is claimed by Wile and Stokes. It is certain that in the prevention of neurosyphilis, early and vigorous treatment is essential directly the initial symptoms appear. This is not the place to discuss the proper method of treating initial syphilis. But so far as neurosyphilis is concerned, assume that every one with primary syphilitic disease is a potential neurosyphilitic. Occasional lumbar puncture for diagnostic purposes is permissible. But there is always some risk in repeated lumbar punctures, especially in unskilled hands. To the writer's knowledge harm has been done by punctures too frequently repeated. Moreover it is better to be guided by clinical signs and not merely by cerebro-spinal content. Whatever the content might be, if a person who had a syphilitic infection develops any suspicion of central nervous disorder (a sluggish pulse or a diminishing knee jerk or ankle jerk or lightning pains) push the anti-luetic treatment and for several years give several courses of approved injections per year. While the writer is willing to allow that there may be some difference of opinion as to the methods to be pursued in the treatment of syphilis of the nervous system once it is established, he declares unhesitatingly that in the earliest stages of a constitutional infection and before clinical signs have appeared an intraspinous treatment of any sort may do more harm than good. Cannon in a recent carefully considered paper suggests as a minimum standard treatment 30 injections of arsphenamine or its equivalent in neoarsphenamine and 45 injections of mercury salicylate given over a period of 9 or 10 months, "to safeguard every early syphilitic against the dread results of nervous system infection." In every individual who has shown the first signs of syphilitic nervous disease a course of 10 or 12 sulparsphenamine or neoarsphenamine injections should be repeated at least three times a year for several years. Such therapeutic procedures will guard against the development of the more serious form of syphilitic nervous diseases and among these we must class multiple cerebro-spinal syphilis, locomotor ataxia and

general paresis. Now that successful arsphenamine treatment can be given intra-muscularly there is no reason why any physician in town or country should delay vigorous treatment at the very earliest period of the constitutional infection.

The Hereditary and Family Affections of the Central Nervous System

Among these are included Friedreich's disease, hereditary spastic paralysis and amaurotic family idocy (Tay-Sachs disease). If anything can be done to prevent the development of these disorders it could only be in ruling against marriages between individuals coming from any family in which any one of these diseases has been rampant. So far as amaurotic family idiocy is concerned, the disease is not transmitted directly as the victims of the disease die at a very early age, and since absolutely healthy children occur in the same family and in succeeding generations, as is now established, it is questionable whether we could insist that all the members of such a family group practice celibacy. As some of these supposedly hereditary diseases may be accompanied by endocrine disturbances the question arises whether the attempt should not be made early in life with children of such families whether they present symptoms or not, to determine whether there is any evidence of disturbance of glandular function. With the improved methods of determining this question (basal metabolism, etc.) early and intelligent endocrine treatment may be in order.

The Progressive Muscular Atrophies

It would seem to be useless even to mention the prevention of these diseases. They very often belong to the order of family affections; a few of them are syphilitic in origin; in some endocrine disturbances have been noted and what was said of family affections would probably be true of this special group. Once these diseases are established, reasonable efforts may be made to counteract the disturbances in locomotion and in the general use of the limbs. To counteract the supposition that nothing can be done to prevent the development of these diseases the author has shown that in one very definite form the peroneal form of progressive muscular atrophy, the disease can be stayed by early orthopedic measures;

and in several other cases under the writer's observation, the progressive wasting of the muscles has been delayed or counteracted to a very large extent by carefully directed and persistent physiotherapeutic measures. Not even in these diseases is the physician to fold his arms and claim that nothing can be done. It may be mentioned here that Eaton and Farnell have reported a case of dystrophy improved by a diet rich in sugar, and Goldthwaite has reported recovery from muscular dystrophy by mechanotherapy to facilitate the glycogenic function of the liver. It seemed more than probable that further studies along the lines attempted by Goldthwaite and others will show that the use of Epinephrine, pituitary extract, and other glandular substances may some day point the way to measures which if they do not prevent the disease itself, will at least counteract the devastating course of the diseases. Let the physician therefore remember that there is some justification even in these diseases for the early use of therapeutic measures possibly of glandular extracts.

We have next to consider a series of functional disorders which to a very great extent may be classed among preventable diseases.

The Neuroses, the Psychoneuroses and the Psychoses

Viewed from the angle of prevention the neuroses, the psychoneuroses, and the psychoses may be considered a unit, whether the condition be a simple neurasthenia, a hysteria, a hypochondriasis, dementia præcox or a manic-depressive psychosis. In all of these heredity or at least family environment is supposed to play a most important role. Often this view leads to a spirit of pessimism and inaction on the part of parents and physicians. But a fatalistic doctrine is the last one we should adopt and to a very great extent it is a false doctrine. It is much more to the point to assume that hereditary influences, if they exist, can be counteracted to a great extent, if not nullified, by a healthy environment. Let us consider every child at birth "potentially normal," and realizing the powerful influence of environment and of early training, it is especially important during the early and formative years of life to watch with the greatest care over a child that is thought to be pre-disposed to any one of the neuroses or psychoses. I have stated elsewhere that outright mental derangement, barring idiocy and imbecility is rela-

tively rare in childhood. Even the psychoneuroses are rare in young children, and yet many of the candidates for grave mental disorders are recognizable in their earliest years, and should be studied and handled with discriminating care. Every physician of experience has known "neurotic" and also "psychoneurotic" stock. In children belonging to such groups the mental makeup, the character development, the social qualities, the adaptability in the home or in the school should be scrutinized most carefully. Any departure from the average or conventional standard should be viewed with suspicion and the necessary corrective should be applied at the earliest possible moment. Nine times out of ten the chief corrective will be a complete change of environment. In the case of very young children, this may mean taking the child out of its mother's hands and placing it under the care of a sensible nurse. As the child grows older, a properly qualified governess or teacher may be substituted for the mother or father, and during the school period, placing the child in a school away from its own home may be productive of the greatest good in preventing the development of neuroses or psychoses, which are so often fostered by the home or family atmosphere. A physician who knows the family conditions favoring the outbreak of neuroses should have the courage, as he has the duty, to be frank and outspoken in stressing the importance of a change of method of training, and a change of environment. This is not a mere phrase. It is a prophylactic measure of the greatest importance. Taking for instance the case of a child born of a very hysterical mother, that at the age of five or six years shows nervous symptoms of various sorts. It is well to apply the principles suggested above and quoting from the author's discussion of this subject in a larger text book, it is well to add (page 772) "In the majority of instances, the early training has been defective; the child has been witness to the behavior and misbehavior of a hysterical mother or some other hysterical relative. Naturally it imitates such performances. The first and most important principle of treatment is the absolute separation of the child from the family. The more intelligent parents can be made to understand that an utter stranger, if properly qualified, may train a child far better than can its own mother. There is little use in instituting any form of treatment unless the hysterical child can be put under

the influence, continued over a number of months, or years, of a sober-minded, intelligent nurse or teacher, who will devote himself or herself to studying the peculiarities of the child and who will make a serious attempt to influence its behavior along natural and proper lines." Should this be impossible, "Such a child should now be placed in a small special school or in a family providing contact with other entirely normal and sensible children. It is in this class of cases that the old-fashioned strict discipline of the school room is especially advantageous." The interests of such children should be "Aroused in nature study and their reading should be carefully directed." * * * "It goes without saying that the general physical development of the child must be guarded in such cases when the age of puberty is reached. It is at this period that the calm judgment and the sober influence of teacher or parent or physician are imperatively needed."

What has been said of hysteria, would be equally true in the prevention and care of young persons suffering from other forms of neuroses and all these conditions can be handled successfully only if the attack upon them is made very early in life.

Of late years, especial stress has been laid upon the earliest recognition of mental abnormalities, in the confident belief that such recognition will lead to the gradual diminution of mental diseases later in life. This is the basic thought underlying the mental hygiene movement. It is the reason for the child guidance clinics, clinics for the careful personality studies and for much of the psychological work that is now being attempted in the family, in schools, and in colleges. In all this work, the guiding hand of the general medical man is needed, of the man who has the physical as well as the mental and moral development of the patient in mind, who knows not only the child or the youth, but also the parents and their ancestors, who is willing to avail himself of such facts as the psychologist or the psychiatrist may provide, but is also possessed of sufficient critical faculty to protect the patient against the many fads of the day. The line of demarkation between normal and abnormal children is so uncertain that the principles which apply to the development of character in the normal child, apply with especial force to the development of those children who are pre-disposed by inheritance or by environment to even the mildest forms of nervous and mental dis-

orders. It is with reference to the development of the mental and normal health of such children that I am anxious to endorse the work that is now being undertaken in our own public schools through the agency of the National Child Welfare Association, and that is known as the "Knighthood of Youth." Such a movement as this, sensibly controlled, and directed as it is, will do much to prevent the development of many of the minor neuroses and psychoses. It is especially fortunate that the children of the poor as well as of the well-to-do are to be equally benefited by the principles pursued by those in charge of this "Knighthood of Youth." It will not be amiss to quote from the program of this association that its fundamental principle is, "To develop individual character through practice of daily acts, to form habits of obedience, carefulness, promptness, self-reliance, neatness, courtesy, honesty, self-control, cheerfulness, kindness, good citizenship and service to others."

The parents of any neurotic child may consider themselves especially fortunate if their offspring can benefit from a program such as this instead of being exposed and influenced by the petty nagging methods that obtain in so many "nervous families."

There are a few conditions which call for brief special comment. Among these the obsessions of early childhood deserve special mention. These obsessions are supposed to originate without rhyme or reason. They are spoken of as imperative concepts, imperative impulses, and the like. Many of them the author is convinced are not visited upon the child out of a clear sky, but are often based upon some experience, sad or otherwise that the child has had. A youngster who had developed a peculiar habit of doing everything three times (repeating sentences three times, touching the ground three times before jumping into bed) had developed this superstition because after the death of his father when he was a boy of seven, feared that his mother would be the second to die. Dreading, therefore, the number two, he would do nothing twice and preferred doing everything three times. This was the starting point of the "obsession" which it took years and years to correct. But if the effort had not been made to curb this obsession the young man would have gone through life a hindrance to himself and a nuisance to others. So many individuals with abnormal habits are seen in every day intercourse that the importance of checking such tenden-

cies early in life cannot be stressed too strongly. Just as in the choreas and tics, the only hope of checking these tendencies is to attack them vigorously early in life. Boys and girls in the school period and in early adolescence are prone to mild mental disorders. Many of them are moody, some are hypochondriacal, and a very considerable number are afflicted with a sense of inferiority, although this is by no means as common as recent discussion of the inferiority complex would have us believe. In all such cases it is a matter of utmost importance that the home and school environment be examined carefully and that the child or youth's relation to his family and other pupils of the school be carefully determined. Personality studies will be most helpful, provided that the person conducting them shows a proper sense of proportion and does not exaggerate acts and traits that are relatively unimportant. It is well to remember that every individual is expected to conform to conventional standards of behavior. If he cannot be made to conform to these it is well to inquire into the reason why a given individual differs from the average, and so far as possible conditions should be altered to meet the needs of a given case, but it is also well not to be too indulgent with incipient neurotics and not to make too much ado over the slightest peculiarity in the behavior of a child. Some of the fads of the day, particularly the fear of repression and the fear of wholesome discipline at school have encouraged the development of many of the minor neuroses. In the period of adolescence, both boys and girls should be given proper sex information and in this the physician can be of the greatest help, but the writer hopes that most physicians will agree with him in the desire not to overstimulate the sex curiosity or the sex practice of boys and girls. In this connection it may be stated that the physician will do well to frown upon self-abuses in either sex. Some physicians are known to be curiously indifferent to, or ignorant of, the evil that comes of continued self-abuse.

Dementia præcox and manic-depressive psychoses are the two forms of mental disorders in which family inheritance, possibly family environment, are to be considered the prime etiological factors. Can anything be done to prevent the development of these conditions? Every alienist of considerable experience has known dozens of such families, in which in succeeding generations two and

three members of a family have been thus afflicted. It will not be necessary to consider the differential diagnosis between the two conditions, nor is it easy to prove this matter by statistics, but the manic-depressive psychoses are even more definitely due to a hereditary taint than is dementia præcox. In the latter, other extraneous factors may exert an influence equal to that of heredity, but in a family in which any one of these diseases has appeared again and again, I would urge that every child be given especial care in its earliest years. If possible, let it be reared by strangers, so as positively to exclude the effect upon it of an unwholesome environment. On the one hand a mother who knows that she has herself been the victim of a manic-depressive psychosis is apt to be too anxious in the care of her child, and on the other hand, however carefully she may watch herself, more or less unconsciously her actions would have an influence upon the child. The children of such families should at the earliest possible moment be brought into contact with other entirely normal children, especially in the kindergarten and in the early primary school period. If economic conditions permit of it, such children should during the school period be separated from their homes and be given careful training and discipline. The question is not, however, as simple as this, because in the development of every child, normal or abnormal, the mutual love between parent and child should be maintained to a sensible degree. I cannot conceive of any problem which would call for greater tact on the part of the family physician than the problem of leading the early training and education of children of neurotic stock along entirely normal lines. So far as dementia præcox is concerned, the writer has been impressed by one especial feature of these cases. So many of them develop in the adolescent period when the first great strain in the struggle for existence is manifested, not only when the question of economic support first presents itself, and the individual is apt to subject herself or himself to unusual efforts; not only under these conditions but especially when the supreme effort is made to rise higher in the social scale, when the boy or girl who works hard during the day, also attends night school, does an inordinate amount of reading, and makes an extreme effort to improve mentally, it is under these conditions that dementia præcox becomes manifest. While it may be allowed and cannot be contra-

dicted that dementia præcox might have developed even if such conditions had not existed, yet the one thing that can be done on the part of the physician is to make the individual or the parents realize the individual's limits as to brain power, and the amount of physical or mental strain that the individual can endure. Not every boy is fit to endure the strain of preparing for college examinations, and surely not all those who attempt to enter upon one or another professional career are fitted for such careers. Some of our institutions have wisely adopted the plan of determining whether or not a student has the ability to pursue the studies which he has elected, and some of the professional schools have had the courage to state frankly to applicants whether or not they are proper candidates for the career that they have chosen. If candidates for colleges and for professional schools were more carefully directed into the lines of work for which they are mentally and physically equipped, some, if not many cases of dementia præcox, would be prevented. Over-ambition, over-strain are as important in the development of the psychoses as are careless living and excesses of all sorts. In all these matters, the physician is to be the wise counselor. If he feels himself incompetent to give the necessary advice, the various social and other agencies that have been organized in many communities will provide proper counsel or at least direct the individual into the proper channels.

Paranoia is not nearly as frequent a diagnosis as it was many years ago. Many of the cases that were formerly labeled paranoia now appear under the title of the paranoid form of dementia præcox, but a small group of such cases still remain and a fair number of them are individuals who have started out early in life with some minor peculiarities of behavior; some may have been recluses, others might have been afflicted with a superiority rather than an inferiority complex, some have suffered especially in the early struggle for existence and others have had life made too easy for them by over-indulgent parents. In the way of prevention of this special form of mental disorder, little more can be done than has been advised with regard to the forms previously discussed. It was thought at one time that no good would come of trying to discuss delusions with a paranoiac, and yet such delusions are sometimes held in abeyance or at least nullified by the discussion and kindly interest

of the physician, so that attempts in this direction might surely be made when the disease has not yet reached its full fledged form. In the early development of dementia praecox, careful examination into all of the social conditions and careful attempts to bring about a reasonable adjustment between the individual and his environment are entirely in order. This matter of the adjustment to the environment is one that requires careful thought and much good can be done as Dr. Bingham for instance has shown, by studying the peculiarities, the characteristics, and the home conditions of young women in high schools. It is more than possible that such careful consideration of all the factors that may possibly affect a developing mind will help to prevent the outbreak of serious mental disorders.

As for general paresis it is known to be of syphilitic origin. In the matter of prevention, therefore, what we have said with reference to constitutional lues applies with especial force to general paresis. Early vigorous treatment is essential, and the good results obtained from it are distinctly in evidence at the present time. The whole aspect of the disease has been changed since the introduction of modern anti-syphilitic treatment. The cases of dementia paralytica that were so frequent in former years with very extravagant delusions of grandeur, with a rapidly developing dementia, cases that ran their course within two or three years, these cases are far less frequent than they were; and when the disease does develop it seems to run a much milder and more protracted course. Every one has known cases that already have run the course of twelve and fifteen years, and now that the malaria treatment promises to be so effective the question should be considered whether every patient who has had constitutional syphilis, and who shows the slightest signs of mental disturbance should not at once be given the benefit both of the most approved anti-syphilitic treatment and also of the malarial inoculation. On the other hand, it is well to state that not every mental disturbance in a syphilitic necessarily implies the development of general paresis. At all events the attempt at prevention must precede the attempt to cure.

THE ROLE OF PSYCHOANALYSIS IN THE PREVENTION OF NERVOUS AND MENTAL DISEASES*

BY A. A. BRILL, M. D.

In his introduction to the English edition of Bleuler's Text Book of Psychiatry, Dr. George H. Kirby made the following significant remark: "The book marks a notable advance in psychiatry, in that it emphasizes sharply the contrast between the older descriptive psychiatry of Kræpelin and the newer interpretative psychiatry of the present time, which utilizes the psychoanalytical principles and the general biological viewpoints developed by Freud and his pupils, in Europe, and by Meyer, Hoch, White, and others, in this country."[1]

Dr. Kirby's remarks naturally recall the status of psychiatry in this country before the advent of Bleuler, or, rather, of Freud. The courses in psychiatry, in the medical schools, if there were any, amounted to almost nothing, conservatively speaking. Thus, in the College of Physicians and Surgeons, New York City, we received a few clinical lectures (four or five) on the whole subject of psychiatry. We were told about mania, melancholia, paranoia, and general paresis, and clinically, we were shown a few patients, who furnished the most interesting part of the whole course. The cases selected were calculated to present insanity, in the popularly accepted sense, and the patients always acted the part. A few years later, one of these patients was under my care, in the Central Islip State Hospital. Fisher was an ordinary manic-depressive patient, of the hypomanic type, who never gave me any trouble; but when I first saw him, at the Vanderbilt Clinic, as a living illustration of mania, he carried on in the most excited and crazy manner. He sang, screamed, jumped and danced around like a crazy chimpanzee. Not only were we impressed with the truth of the popular conceptions of the bizarre lawlessness of the maniac, but following

* Read before the New York Neurological Society, March 6, 1928.

1. Bleuler—Text Book of Psychiatry. English Edition by A. A. Brill—The MacMillan Company, New York, 1922—Int. p. viii.

such a clinic, the idea of insanity and the State hospital became more or less repellent to us. One of my fellow students, knowing that I contemplated entering the State hospital service, exclaimed, "And you are going to live with such 'loons'. You'll become crazy yourself!" This remark re-echoed in my mind, until I became disillusioned, through actual contact with patients. Later on, Fisher told me that Dr. Wright, who brought him from Ward's Island, urged him to give a good show to the students. The students were not told to read any text books. Dr. Starr's notes on neurology, which we all studied, contained also some pages devoted to insanity. This is not recounted with the idea of criticism. In its primitive form it was as good an attempt at psychiatric instruction as prevailed at the time.

Things were quite different in the State hospital in 1903. Dr. Adolph Meyer, with his able assistants, were laboring hard to arouse some interest in psychiatry, by acquainting us with the modern psychiatric viewpoints then in vogue in German-speaking countries, and especially with the works of Kræpelin. The younger physicians followed him implicitly, but some of the hard-boiled old timers offered all the resistance they could muster, to these "new fangled methods." "Why write so many notes and waste so much time," they reiterated. "What's the good of it?" An occasional note of "Dull, stupid, and demented," was so much simpler than a long description, on the basis of close observation, as demanded by the examination schemes issued by the "Pathological Institute." However, most of us enthusiastically accepted the newer psychiatry, taught by Meyer, and very soon the New York State hospitals compared very favorably with most of the European hospitals. Nevertheless, after working with these methods for a number of years, things became a bit monotonous. The patients were examined and fully described, à la Kræpelin, Meyer, and with an occasional sprinkling of Wernicke, Zieben, and others, and then transferred to no particular ward. If the patient improved sufficiently to be discharged, he was sent home for a while; usually he remained in the hospital.

As for the neuroses, one could hardly speak of classification in 1903. Most of them were thrown into the waste basket of hysteria and neurasthenia and explained on an organic basis, the influence

of the early 80's, when such authorities as Goltz, Hitzig, Ferrier, and Fritsch had demonstrated a definite association between the neurotic manifestations and circumscribed areas of the brain still prevailed. For, even in 1885, the French school still explained hysterical paralyses by saying that they were determined by the same parts of the brain which were responsible for the coarser organic paralyses. And only about 25 years ago, when, as I said, definite progress was made in the treatment of the psychoses, conditions were not much different as far as the psychoneuroses were concerned. There was no one here showing in any way a vital interest in the psychoneurotic.

I well recall when a few years later, one of the chiefs of the neurological department of the Vanderbilt Clinic asked me to gather some cases for the clinic, on neurasthenia, and to my question as to the kind of cases he wished, he said: "Any functional cases that don't show too many hallucinations and delusions." I am sure, however, that the Vanderbilt Clinic did as much for these stepchildren of mental diseases as any other institution. We gave them good tonics, sedatives, electricity, and other respectable placeboes. How could one think, at this time, of prophylaxis in functional nervous and mental diseases? For, in order to prevent a disease, one must first know its pathology; and there was no psychopathology of the neuroses. With very few exceptions[2], no attempt was made to understand the nature and mechanisms of the functional neuroses, until the advent of Freud.

I well recall my first visit to Burghölzli, over 20 years ago, whither I was directed by Dr. Frederick Peterson. As I accompanied Professor Bleuler on his rounds, he repeatedly pointed to patients and remarked, "A case of catatonia, another case of catatonia." But these patients did not look to me like the Kræpelin catatonics I was accustomed to see. I finally worked up enough courage to ask him whether these patients were really catatonic; to which he replied: "Yes, they would act exactly like the Kræpelin catatonics as you see them in your hospitals, if it were not for the fact that we never let them deteriorate so far. We understand their language." I thought that he meant the German-Swiss dialect, to which I remarked, "But we understand our patients, too." He

2. I naturally think of the very creditable works of Morton Prince, the somewhat dogmatic efforts of Boris Sidis, and of some of the lesser lights.

smiled and said, "What I mean is that we know the language of the unconscious as given by Freud, and because of that, they never assume those resistive poses which we were wont to see before." That was a great surprise to me. I could not quite understand what he meant.

As I stayed in Burghölzli, I became more and more acquainted with this language of the unconscious, and now, after twenty years of almost constant occupation with the Freudian principles, I can say that if one uses this language in his study of mental patients, they not only behave better, but they readily impart to us the meaning of their neuroses, and furnish us with the psychopathology which is absolutely necessary for the study of prevention. In other words, a prophylaxis in the functional psychoses and neuroses really became possible only since we began to use the psychoanalytic technique.

It was Breuer and Freud who began to show the road to prevention, by throwing light on the riddle of the psychoneuroses, and it was Freud, who later developed a new psychology, without which, to quote Bleuler, "Psychopathology would not have progressed." For psychopathology signifies a knowledge of the deeper mental emotional structures, which psychoanalysis alone made accessible to us. One is no longer satisfied to diagnose patient X as a præcox because he shows hallucinations of hearing and vague delusions of persecution, but one must also find the meaning of these hallucinations and delusions, by correlating them with the patient's personal and intimate experience; one is no longer content to note that patient Y has a mysophobia or hysterical symptoms, but, having diagnosed the type of neurosis, one proceeds to unravel its hidden meanings, by studying, as it were, the gross and microscopic psychopathology of the disease. The analytic psychopathology gave new interest and new life to a specialty which hitherto had a tendency to grow gradually more tiresome and uninteresting.

In studying morbid manifestations in this manner, it was soon found that the most peculiar neuroses and psychoses, which at first struck the average person as being foreign to his imagination, all had normal roots. Let us, for example, consider the strange behavior of a compulsive neurotic patient, who had to be extremely careful in getting into the bath tub, lest he should splash the water. If

he was not fully successful, he had to get out, dry himself, and start over again. This ceremonial was usually repeated a number of times before the patient could finally take his bath. Before we worked psychoanalytically, such behavior was either ignored or considered a sign of a weak mentality. The patient was usually laughed at, and told to stop this foolishness. Such advice was as futile as admonishing a pneumonia patient to stop breathing so frequently. This particular neurotic received such advice dozens of times, only to become more and more disheartened by his incapacity to stop this ceremonial. But psychoanalysis told a different story. When I asked the patient what would happen in the event that he would splash the water, the idea occurred to him that he or his father would die. But as his father had been dead for many years, he had to admit that this idea was as foolish as the whole obsessive act. Nevertheless, as we shall show, there was good logic to this seeming foolishness. On further analysis we found that this *anal-sadistic* patient was full of hostility and rage towards his father, or substitutes of the latter. Most of his obsessions, of which he had many besides the one mentioned, were the products of dead wishes directed to his very strict father. In brief, this obsessive ceremonial was traced to a definite episode, when the patient was about five or six years old. At that time, he was admonished by his mother to stop playing with his boat in the bath tub, because his father was asleep in the adjoining room and must not be disturbed and, as he refused to obey her, he was finally spanked by his irate father. We may be permitted to assume that the patient reacted very vehemently to this spanking. It was definitely ascertained that he expressed all sorts of hostile wishes to his father. Such incidents, which were not at all infrequent in the patient's life, produced later an unconscious feeling of guilt or an unconscious need for punishment. Briefly, the ceremonial meant: "Be careful not to splash the water, you will be spanked, you'll wish your father dead (or you'll kill him) and then you will die as a punishment for your evil act." One must remember that the neurotic, like the child and savage, is still controlled unconsciously by the infantile *omnipotence of thought* wherein a wish equals an act. Through the mechanisms of condensation and ellipsis, these thoughts resolved themselves into the obsessive ceremonial that he must not splash the water on entering into the bath tub.

One can clearly see why this obsession could not be cured by the old methods. It disappeared as soon as it was translated to the patient and the logic of it was shown to him. The same logic can always be demonstrated in the wildest divagations of the insane; there is a method in madness. Indeed, there is only a slight difference in degree between the neurotic, psychotic, and the so-called normal. The same pleasures and pains form the motive power in all actions, but in the words of Bleuler, "Whereas the normal Philistime adjusts himself to the conditions in which he is born, and balances with their slight changes, without thinking or noticing much in the process, the psychopathic individual cannot adapt himself well; he reacts to difficulties resulting therefrom, either by evasion or by creating an imaginary world for himself through grandiose or persecutory delusions."[1]

This very sketchy analysis of this obsessive ceremonial, brought up here merely for illustration, shows clearly that the symptom is not an isolated oddity, springing *ex nihilo;* on the contrary, it is a distorted presentation of thoughts and feeling, having normal roots and logical elaborations, but in order to understand it, the doctor cannot content himself with a simple description of it. To evaluate fully the play of forces entering into the formation of neurotic and psychotic manifestations, the doctor must not only be able to comprehend the neurological and psychiatrical factors, but he must also be a good psychologist and somewhat of a sexologist, sociologist, and anthropologist. For, upon studying symptoms psychoanalytically, it was soon found that the neurosis is a conflict between the primitive nature of the individual and the social demands of his outer world, and that the symptoms which result from this conflict resemble in their essentials, the religious ceremonials of the savage. Psychoanalysis has thus thrown much light not only on abnormal mental and emotional adjustments of modern man, but on cultural institutions in general.

With the short time at my disposal, I can mention only headings of long chapters, if I wish to enumerate in a general way, what Freud has given to the mental sciences and to what extent he is contributing to the prevention of nervous and mental diseases. Just think of the abstruse and barren psychology of the past and

1. Bleuler I. c. p. 172.

compare it with Freud's psychoanalysis. Just think of his teaching us to understand the psychic mechanism of symptoms, by probing into the deep *unconscious* strata of mental processes. For, notwithstanding some half-baked parlor psychologists, to the contrary, there is such a thing as an unconscious. But whereas many other psychopathologists, notably Charcot, Bernheim, Forel, Prince, and others, recognized unconscious or subconscious mentation, on the basis of hypnotism and cases of multiple personality, Freud gave life to it, by solving the great riddle of dreams as a mental function, by showing the intimate relations of *dreams, fancies,* and morbid symptoms, to such productions as literature and art. All these mental phenomena express open or distorted wishes, which the modern person cannot openly show. Viewing these phenomena psychoanalytically, one can readily see the universality of the *inner confict* and the mechanism of *repression.* Even some of our opponents now talk of *repression, conversion,* and *displacement.* All these expressions are Freud's creations; they are the logical sequelae of the theory of *abreaction,* which, although vaguely known to poets and to the ordinary people, was never formulated before Breuer and Freud observed and explained it in *conversion* hysteria. I have a mixed feeling when I hear people use these terms. I feel pleased that these words found their way into the literature, but sometimes I boil within, when some of our antagonists, while admitting the facts represented by these expressions, nevertheless, hate to give any credit to their creator. I must repeat that I can only very briefly allude to these mechanisms; I cannot dilate upon them nor upon the more recent formulations of the Ego Theory which I would like to illustrate with clinical material, so as to show the part they play in mental prophylaxis. I must, however, say something about the emphasis Freud puts on *sex* in normal life and in the production of neurotic and psychotic manifestations.

The bête noir of modern life has always been neglected by the medical profession, to the great detriment of science, and the patient. Freud has been accused of exaggerating its importance in the neuroses, which I do not admit by any means, but, even if I should admit it, I would still say that it is better to exaggerate a glaring fact than to ignore it altogether. As a matter of truth, sex has been associated with the neuroses for thousands of years, surely as long as the name "hysteria" existed, but whereas it was orig-

inally conceived in the coarse physical sense, Freud, by studying the individual in his normal and abnormal aspects, succeeded in refining and sublimating sex and placing it where it belongs.

It is my conviction that the greatest advance, not only for the prevention of nervous and mental diseases, but also for the adjustment of social problems in general, was made by Freud when he said, "In a normal *vita sexualis* no neurosis is possible," and at the same time advanced the concept of the *infantile sexuality*. For it must be borne in mind that the early sexual manifestations are to be conceived as physical functions striving for pleasure through various parts of the body, and that these infantile sexual functions are to be distinguished from the *genital functions* which manifest themselves at puberty. Only by keeping in mind this scheme of sexual development can we understand the so-called perversions and the neuroses which are their negatives.[3] In other words, the sexual life is not to be understood in the popular sense, as the procreative functions beginning at puberty, but as a biological function which can readily be observed with the beginning of birth. The infantile sexuality of the *autoerotic phase* of childhood consists of a number of components and partial instincts which may be observed in pure form, or in the process of evolution, depending on the age. Thus, the *oral functions* are utilized by the child not only for the taking of nourishment, but also for thumb sucking and similar activities of a sexual nature, which may sometimes continue beyond the autoerotic phase. The other ego organization of this period is designated as the *anal-sadistic* and is characterized by the fact that the child obtains direct pleasure from the anal activities, not only by the act of defecation, but also by utilizing this function to harass and control the environment. Direct observation of child life, as well as anamneses obtained from the mothers of neurotics and psychotics, often show that if any of these early organizations, or any of the other components and partial instincts have been markedly accentuated and prolonged, they form definite points of *fixation*, to which the individual may later regress. What we call dispositions are simply inhibitions or weak spots in the psychosexual development—analogous to the facts of general pathology of other

3. Those who are not acquainted with Freud's theories may refer to the author's Psychoanalysis, Its Theories and Application; 3rd Edition. W. B. Saunders, Philadelphia.

diseases—which take place during the first phase of childhood. Unfortunately I cannot enter here into a long discussion of the libido theory. I simply wish to show the importance of the infantile sexuality and its relation to the third phase, or the genital sexuality from which it is separated by the *latency* or second period. This latency period, according to Freud, is something specific to mankind.

Looking at the sexual evolution in this manner, one can see the mistakes that were made by our elders. On the one hand, a child was supposed to have no sex at all, so that in the beginning of his existence, or during the first phase of the psychosexual evolution, he was subjected to all sorts of sexual traumata through physical contact and emotional pampering, often to the extent of stimulating his sex activities prematurely. But when the period of his genital functions actually began, he was still kept from all knowledge of sex and thus left to grope in the dark. No wonder that sex difficulties are at the bases of the neuroses and psychoses. As a result of sex secrecy and suppression the adolescent boy is badly prepared to cope with the welling sexuality of puberty, which needs special control, and adjustment through *sublimation*. For, in consequence of economic and other social factors, it became quite apparent that the growing youth had to renounce, temporarily at least, his active sexual functions. Only the very strongest can adjust themselves without succumbing to the various neurotic and psychotic maladjustments. To help the individual to normality and prevent functional nervous diseases, the utmost care must be exerted to bring about the normal evolution of the psychosexual life. It is gratifying to note that some physicians, parents, and teachers are now making good use of the knowledge furnished by Freud. I am convinced that we are not only curing by psychoanalysis, but are preventing many neuroses and psychoses.

It is not possible to dilate any further on this important theme, beginning with Freud's analysis of a case of paranoid dementia, Jung's "Dementia Præcox", Bleuler's "Schizophrenia", and Abraham's works, volumes have been written in corroboration of Freud's principles. I feel that we know quite a little about dementia præcox, manic-depressive psychosis, and paranoia, and we are making greater progress since Freud has developed his theoretical concepts of the ego.

The indications are that the scientific psychiatry of the future will not be content with pictorial descriptions of peculiar mental states and with a treatment correspondingly jejune. The scientific psychiatry of the future will be based on a psychoanalytic study of the individual, of all his mental and emotional phases, in a manner taught us by Freud and his school. There can be no other approach to prophylaxis.

PROBLEMS IN THE PREVENTION OF THE FUNCTIONAL PSYCHOSES*

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Preventative medicine as applied to psychiatry and especially to the co-called functional psychoses is of recent origin. The traditional view of mental disorders encompassed as it has been with mysticism and legal terminology, has been a fatalistic one. A descriptive statement of the psychosis, a bad prognosis—in the manic-depressive group a recurrence was assured, assumption of heredity, rationalized etiological factors, treatment generally limited to custodial care, and a general aloofness of medicine was the stereotyped formula.

With the advent of modern medicine, the organic and the toxic-infective-exhaustive disorders have been more clearly understood. Studies have taught us to discuss with a great degree of accuracy the causes, course, treatment and prognosis of these groups.

The functional disorders, largely because they resisted understanding in terms of organic reactions, have been more difficult to disengage from the traditional conception and to view from a scientific angle. The conception of the unconscious, personality make-up, and dynamics as applied to human thought and conduct, opened the way to the understanding of this group.

Recent studies in heredity, made both in this country and abroad, have failed to establish mental disorders as generally hereditable. Dunlap and other neuropathologists have shown that there are no organic brain changes in dementia præcox. Both of these views make for a less fatalistic and a more hopeful attitude.

The constitutional and physiological studies of Cannon, Draper, Gibbs, Kretchmer, Pavlov, and others have dispelled the formerly accepted view of mind and body, and have contributed additional evidence of the biological nature of these disorders which permits them to be considered in terms of the entire organism.

* Read before the New York Neurological Society, March 6, 1928, as part of a symposium on the Prevention of Nervous and Mental Disorders.

Physical factors as immediate causative agents in the production of the psychoses have been evaluated and their relation to mental symptoms can be stated with reasonable exactness.

Through studies in anthropology, the history of the development of the race and of the individual has been unfolded, and primitive reactions of behavior and thinking have become understandable.

The functional psychoses present many problems which are yet to be elucidated; two of these, the understanding of which I am sure will contribute to their prevention, are those of personality make-up and the importance of the psychological environment of the family life.

The personality make-up may be looked upon as the integrated total reactions which are characteristic of an individual. The personality is not static; it is in a state of constant development. Old situations cease to exist and old types of reaction become obsolete. New situations arise which call for new reactions. The physical, intellectual, and emotional development of the individual and the environmental conditions both constantly demand of the personality a giving up of established responses and the taking on of new. The well integrated organism relinquishes useless reactions and promptly meets new situations with new responses. Hoch pointed out that, notwithstanding this constant change in integration, certain reactions and certain levels of integration become constant for the individual. He referred to these habitual reactions as the "main tendency of the personality," and pointed out that it was important that studies be made of the personality make-up to ascertain what the main tendencies or preferred reactions of the individual were and what factors and at what levels these factors operated to determine this type of reaction and personality. It is a well-known clinical fact that a patient will not react with a neurosis or psychosis to every stress he is called upon to meet, but that when certain conditions are met, he with almost certainty will react after an established pattern.

The identification and an understanding of the psychogenesis of the preferred reactions by an analysis of the immediate situation, the precipitating causes and unconscious trends, give data which can be applied in the treatment and management of the case. Realization of these factors by the patient, re-education, and modifica-

tion of the environment will assure him of satisfactory mental health.

The psychological environment of the family and its influence upon the development of the personality and the mental life of the individual in childhood and adulthood have not been fully appreciated nor given the consideration which they deserve.

Each member of the family group in their relation to one another contributes to the environment. The parents or their surrogates are the outstanding members of the group. To them the individual becomes attached and to one, generally of the opposite sex, more than to the other. The realization that the loved parent has other attachments is the beginning of the conflict of love and hate which plays such a large part in the mental lives of the entire human race. The attitude of the parents, indulgence by the one and discipline and punishment by the other, intensifies these feelings. Identification with a parent takes place early and conditions the patient to this parent's type of reactions. The conduct of the parents is a constant example to the individual and imitation is unconsciously going on. Punishment, severe discipline, and often the reserve of a parent because they thwart a desire and prevent a free discharge of an emotion, engender feelings of hate, inferiority and loss of social esteem. These morbid reactions color the whole mental life of the individual. His emotional and instinctive reactions are deviated and his ideals, his moral reactions, and his achievements are warped. An overdetermined fixation on a parent from which the individual is unable to free himself, is often responsible for masturbation, for an inability to meet adult sex demands, and for perversions. The family environment may so influence the development of the personality that it leads the patient directly into a severe disorder. In other cases it is the cause of temporary and less severe reactions. The effect of the family psychological environment is often mistaken for hereditary influence. Studies have shown that the presence of neurotic and psychotic states in parent and child are not necessarily hereditary but may be conditioned.

Report of Case

A single man of 27, a Ph. D. in chemistry came to Bloomingdale Hospital voluntarily October 3, 1926. For five weeks he had thought people were passing remarks about him and that girls

jeered at his home. He finally went to his mother and said, "I am tired of life and have slept with a revolver under my pillow but did not do it because of you. Could you stand it if you heard your son was a pervert?"

Of those who contributed to the family environment, the paternal grandfather was a fine man with an exaggerated sense of honor. He was an ineffective engineer who spent most of his time endeavoring to interest people in an invention. The paternal grandmother had a sunny disposition but was strict and feared by many. The father, an only son, "the sunniest creature ever," was brought up in a girlish manner, was an idealist, and loved everything beautiful. He was in the tool business but was not an effective person.

The maternal grandfather was a typical Prussian and was miserly, and the czar of the family. He was never sick in his life and was a successful business man. He lived in the patient's home until his death, was fond of the patient and predicted that he would become a leader. The maternal grandmother was "a wonderful woman loved by all," but was nervous, highstrung and temperamental. The mother, a forceful, aggressive, highstrung woman who had been a spoiled child, regretted that she had not had a good education. She was anxious that the patient be an educated man with a profession. She ran the family and deplored the way she had managed the patient. An only sister is four years the patient's senior. She is a college graduate who has always been active, aggressive and successful in business. She had many men friends and two and a half years ago married a heavy-set, easy-going man.

The patient was born in Germany 27 years ago and came to the United States at the age of three. There is nothing of note in his infancy. He has had no serious illness. From early boyhood he is described as having been active, highstrung, willful, and stubborn which led to frequent whippings by his mother in an effort to discipline him. The governess managed him much more easily and seldom had to punish him. At the age of four and a half years his mother sent him away from home to a school for mental defectives for six months because she was unable to manage him. He attended the Ethical Culture School where he was constantly in mischief, none of which was malicious, yet he was frequently punished for his antics. At seven he returned a blow to his mother and was

punished by having his hands tied behind him and soap put in his mouth. On another occasion he was made to stand all day and into the evening before he would say he was sorry for something he had done which displeased his mother. When the patient was nine, his sister ran away from home because their mother would not let them have a Christmas celebration. She wanted the patient to go with her but he was afraid to leave his mother. At thirteen his mother "broke his will with a rod and he agreed to be good." After this his mother permitted him to attend the opera each week. She often told him of what his grandfather had done and of the success he had made. He would say: "Mother, you have no confidence in me."

As a boy he was an average student but lacked concentration. He was interested in manual work and collected stamps. He played the piano, was artistic, visionary, and enjoyed music and sculpture. At 13 he visited the Museum of Arts often and knew the attendants by name. He was haphazard in his plans, was restless, active and impulsive. He talked little. He was always truthful, honorable and trustful. He was not shrewd. He spent his money freely and tipped liberally. He played baseball some and later golf.

With girls he was always shy and over modest. His mother thinks that she called him "baby dear" too long. Masturbation began at 17 and has continued. He had few friends and later was more reserved with his mother and sister. He resembled his maternal grandfather to some extent, apparently in physique, and his maternal uncle Henry, who "had a sunny disposition and a heart of gold." He died at 24 from rheumatism for which he took much patent medicine. This uncle was always fond of the patient. The patient was always very close to his mother who was proud of him and urged him to forge ahead. He and his sister were close companions and when out together were often taken for sweethearts. She coached him in his college examinations.

He always aspired to be a strong, forceful man, sought power, and wanted to do the ethical thing. Yet he had a fear of weakness. He was diffident with strangers. He lacked courage to go out and tackle things, wondered what others would say, and was easily discouraged. He was serious about things and wanted to do his duty. He had a violent temper which was fairly easily aroused. He did

not care for jazz and preferred the company of older people. Of recent years he has tended to ignore his father.

The patient was an average good student. He graduated from the Horace Mann School at 16, went to Amherst for three years. Deciding to study chemistry he left and took two years at Massachusetts Institute of Technology where he received his B. S.,and a year later his M. A. He then went to Germany for three years and in 1925 got his Ph. D. in chemistry.

Four years ago, in 1923, his sister visited him in Germany and they spent the summer together. Six months later his sister married after which he did not reply to any of her letters. Two years later, in the summer of 1925, his sister and her husband visited him. He accepted his brother-in-law but did not appear much interested in him. His sister at this time was aware of a change. He was more serious and absorbed. After he finished his University work he took a trip around the world. On this trip he met a Mr. D. whom he has since spoken of as his ideal. Mr. D. had a young woman relative with him to whom the patient became much attached. He suddenly dropped his acquaintance with her, saying he could not afford to marry her and did not want things to go too far. On his return home in 1926 he went to Canada to see this young woman. At the door he met her brother, asked after her health and returned home.

His family noticed that he was more serious and absorbed. He stood with closed eyes, and said he had his own problems to solve. He hesitated much about going out in the world and taking a position. He thought work offered to him was not up to his training and ability. He did take a position after much hesitation and was away from home for several months. Six months before admission he read books on the psychology of sex, and wrote on the duty of the conquest of fear and of obeying one's elders, which is usual to the age of 16. (He was 25 and went to Europe.) He further wrote about the girl he had met and of the fear of marrying and being dominated by her; about the world being ruled by the strong; about speculation as to what God is; and of physical health being used for other forces of life better than sexual purposes. He pleaded to be allowed to sleep in a bed beside his mother. He feared he would be blackmailed. His writings he feared would brand him as a pervert,

and he spoke of a common bond with Oscar Wilde. He spoke of being ostracized, of fearing to die without the respect of men. He finally developed hallucinations and ideas of reference and talked of suicide.

In the hospital he became reticent, antagonistic and refused food. He exposed himself, made suicidal attempts and sudden impulsive assaults on those who were in attendance upon him. He thought something had happened to his genitalia, asked to be examined, and then questioned the qualifications of his physicians. He insisted he was not as bad as they thought he was. He heard voices threatening him and calling him perverted names, and lights were flashed in his face.

He was resentful toward his sister when she visited him, for having tutored him and made him skip a year in college. He ordered his mother to leave when she called and was always much more disturbed after her visits. After one disturbed period following his mother's visit, he said that at 14 he had had a fear of being alone; that he was always locked up when he was a boy, and that seemed more important than anything else; that his mother used to put court plaster over his mouth; that he and his mother always crossed, and that he wanted to go out with the gang but she would not let him. He added, "Doctor, why do we forget and then remember some things?"

Discussion of Case

On the paternal side of this case the men were artistic, mild, and not very effective; while the women were aggressive and dominated the family. The mother, an uncompromising, cruel, and unimaginative woman with a fixation on her czaristic father, was the outstanding influence in this patient's life. It would appear that in this environment two avenues of development only were open to the patient. Either he must resemble his grandfather and mother, or his father and uncle. In this family there was no middle ground for training or emulation.

Growing up in this atmosphere this boy who had a good intellectual capacity, and who wished to do as other boys did, by constant restraint and whippings from a domineering and unknowing mother became timid and shy, and lacked courage to face the ordinary requirements of life.

Fixed as he was upon his mother, he had no proper outlet for his instinctive and emotional demands. He was unable to sublimate these tendencies through intellectual attainments. He therefore reached adulthood without equipment to meet the demands of adult instinctive requirements. He admired strong men but he himself was timid and lacked courage and the ability to become strong.

When his sister, one of his emotional fixations, forsook him and married another man, he became absorbed and later resentful of the role she had played in his life. Then he met a man (D) whom he adopted as his ideal. This man had a female relative on whom the patient endeavored to fix his libido and make her the object of his affection. Timid at asserting himself he automatically withdrew, saying he could not afford to marry her. He tried again and ran away. He feared to look for employment believing his ability would not be recognized. He was finally employed away from home for a few months. Deprived of his ability to assert himself instinctively and socially, he returned to his mother. He feared now that he was ostracized, that he would not be looked upon as a man, and that he was suspected of seeking an instinctive outlet through homosexuality. He turned against his sister and mother. Then he feared his instinctive impotence and tried to commit suicide.

The main tendencies of his personality were his mother attachment and his unsuccessful attempts to rebel against it, tendencies to withdraw from instinctive and social reality, masturbation, unsuccessful attempts to sublimate his emotional and instinctive life, and finally a complete surrender to his infantile fixations.

The other factors which have contributed most to the warping of his personality were the family environment, the marriage of his sister, the attempt to meet his adult instinctive desires in his interest in the young woman whom he met on the trip around the world, and his inability to achieve satisfaction in his work.

The case, I believe, shows the importance of the family environment in shaping the development of the personality make-up, also that the reactions of an individual conform to a pattern for that individual.

A VISIT TO PROFESSOR FOERSTER'S CLINIC IN BRESLAU WITH SPECIAL OBSERVATION OF HIS TREATMENT OF EPILEPSY*

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Prof. Ottfried Foerster is, I believe, the most interesting and probably also the most outstanding figure in German neurology today. His career has been absolutely unique. In addition to being one of the only two professors of neurology—as distinct from neuropsychiatry—in Germany, he is the most prominent neuro-surgeon in that country and probably the only individual who has ever turned toward this specialty after establishing an international reputation as a neurologist.

He had long been impressed by the futility of medical treatment in most organic diseases of the nervous system and began to search for other means, if not of curing, then at least of improving the condition of these sufferers. For this he looked to surgery. Thus whenever he was faced by a patient with incurable pain he tried to give relief by directing a surgical colleague to cut the sensory roots in the involved area. If disfiguring contractures existed he asked the surgeon to cut the tendons of the contracted muscles, etc. Soon, however, the machinery of planning operations and finding another to execute them became too cumbersome, and he tried to do them himself. What is more, he found he could do them well, and has been doing them ever since. Besides the established neuro-surgical procedures for tumors of the brain and cord, and peripheral nerve plastics, his ingenuity has lead him to devise a great variety of operations for conditions which are ordinarily not considered surgical.

To a man with Foerster's views, the great group of patients blanketed under the term "epilepsy" would naturally be absorbingly interesting. He proceeded from the obvious to the obscure. He dealt at first with those cases of epilepsy that evidently rested upon an organic and especially a localizable basis, for example, tumor, trauma, parasitic disease, granuloma, abscess and localized meningitis. These cases he attempted to cure by a removal of the local cause. Through the study of these he was lead to the con-

* Read before the Ward's Island Psychiatric Society, March 28, 1928.

sideration of so-called idiopathic epilepsy, and the latter has now come to occupy him especially.

His views upon epilepsy have been summarized before the congress of German neurologists in Düsseldorf in 1926 a report of which appeared in the Deutsche Zeitschr. für Nervenheilkunde, volume 94, which report has been painstakingly transcribed in English by Dr. Bunker in the PSYCHIATRIC QUARTERLY. Foerster looks upon two factors as being involved in an epileptic fit, viz: the latent readiness to convulse (Krampfbereitschaft) and the focus from which as a center the nervous energy spreads giving rise to a convulsion. The stablest nervous system may, under the influence of a severe enough noxus react by giving rise to an epileptic fit, while contrariwise the slightest trauma or intoxication may suffice to call forth from a sufficiently irritable nervous system the same reaction. Moreover, depending again upon the character of the soil, the chief causes of later convulsions are previous convulsions during which slight hemorrhages and damages resulting from venous stasis occur, to serve later as seeds for renewed cataclysms. Each succeeding fit, therefore, confirms an epileptic more and more in his epilepsy. Thus a long forgotten, perhaps minor, trauma or childhood convulsion based upon a temporary toxemia, such for example as may arise from a gastro-intestinal disturbance, is often the precipitating cause of so-called idiopathic epilepsy in people with epileptic diathesis.

The readiness to convulse may depend upon a variety of factors. Chief among these is the inheritance of an unstable and unusually irritable nervous system. It may also depend upon damage done to the germ plasm, as for example by alcoholism in the parents. Because of the fact that this increased irritability is present particularly during periods of endocrine instability viz: infancy, puberty, and the involutional period, it seems to Foerster that the endocrine balance is particularly involved.

The treatment of epilepsy by attacking the "Krampfbereitschaft" is obviously fraught with difficulties, although I was told of a case in which the convulsions were associated with tetany treated successfully in the Breslau Clinic by the transplantation of a human parathyroid, and another case in a girl whose seizures came regularly every 28 days although she was completely amenorrhoeic, cured by the transplantation of a normal human ovary.

However, many cases, even of idiopathic epilepsy have convulsions beginning focally, and careful observation has lead Foerster to believe that often apparently generalized convulsions begin at a single focus. The elimination of these focal areas, moreover, may often be accomplished surgically, after which the lowered threshold to irritable stimuli may then be kept elevated quite easily by the use of drugs.

Cases of idiopathic epilepsy subjected to this treatment are naturally carefully selected, and this selection is based upon thorough study and analysis of each case. In the first place, only those epileptics whose fits are not readily controlled by medication are selected for operation, and among these only those are chosen whose seizures, however peculiar to the given individual are nevertheless always similar to each other in their beginning, each time they recur, indeed always begin in a manner pointing to the cerebral focus from which the waves of energy spread over the cortex.

Since beginning this work Foerster has contributed greatly to the localization of function in the human cerebral cortex. He always operates under local anaesthesia. In every case he uncovers sufficient brain to include the central convolutions. The identification of the precentral convolution is always made first. This is accomplished visually, then confirmed by electrical stimulation. A galvanic current of from 2 to 4 milliamperes (cathode stimulation) suffices to bring out motor responses to stimulation of the centralis anterior. The same motor responses occur to the stimulation of the centralis posterior, but a current, about 2 milliamperes stronger than that used for the centralis anterior in the same individual is required. Other areas usually fail to respond to galvanism, and bipolar faradic stimulation is used after testing its strength on the operator's own hand. By this means he has worked out areas in the cortex that respond regularly in a characteristic way to stimulation. Thus at the foot of the first frontal convolution is his frontal *Adversivfeld* which upon being stimulated gives rise to conjugate movement of the head, eyes and trunk to the contralateral side, and tonico-clonic spasms of the contralateral extremities. Convulsions arising in this area have a march corresponding to the effect from electrical stimulation, and are not preceded by any aura. At the foot of the second frontal convolution is the frontal eye field which

causes twitching of the eyes toward the contralateral side, and also gives rise to no aura when fits have their trigger point here. The Rolandic portion of the operculum connecting the pre and post-central convolutions inferiorly he has shown to be the seat of origin of fits beginning with rhythmic chewing, licking, swallowing, or smacking movements, and closely related to this field is one giving rise to grunting and moaning noises as well as singultus. He has also proved the presence of so-called *Adversivfelder* in the parietal, occipital and temporal regions which when stimulated cause the eyes, head and body to turn toward the opposite side. Before this happens, however, an aura precedes it in these areas. This consists of paraesthesia in the case of the parietal field, auditory or visual aura when the temporal or occipital fields are respectively stimulated, and fits initiated in these areas resemble in their beginning the reaction to stimulation. Naturally, large, so-called silent areas remain in the brain, but a majority of epileptic fits can be proven to be initiated in one of the described fields.

Upon admission of an epileptic patient to the hospital, aside from taking a careful history concerning especially the character of each attack from the moment it starts, and making a routine neurological examinations, every effort is made, on the part of the staff, to observe several fits from their very beginning. Being constantly on guard, it frequently happens that a physician is present when a convulsion occurs spontaneously, for the most part, however, the fits are induced. To bring this about various means are employed. The most effective is hyperventilation which causes convulsions in about 40 per cent of epileptics. Less effective, but frequently useful when hyperventilation fails are pressure on the carotids, injection of adrenalin or administration of alcohol. The final check, however, is made upon the operating table, by electrically stimulating the exposed brain. Upon a properly selected case, namely, an epileptic patient who has failed satisfactorily to respond to medical treatment and in whom the trigger-point at which all his seizures are initiated has been clinically determined, the brain is exposed under local anaesthesia. The first thing then is to become oriented by determining, electrically, the position of the pre-Rolandic convolution. After that stimulation is begun in the region suspected as the trigger-point, from the periphery inward. Almost invariably a

fit typical for the given patient is initiated when the ordinary stimulus is applied to the involved area. If this does not take place the clinical localization is assumed to be wrong.

In case the seizure is to occur as a result of stimulation of the cortex, it may be predicted by the operator in full view of the brain, by the fact that just preceding the convulsion the brain gets pale and shrinks owing to vasoconstriction. If a manometer stands in connection with the cerebrospinal fluid spaces it will register a marked fall in pressure at this time. Coincidental with the onset or just after the onset of the attack the brain becomes suffused, owing to a venous stasis and the cerebrospinal fluid pressure increases often to considerably above the normal. Although Prof. Foerster cannot convince himself that epilepsy is simply a result of vasomotor instability alone, this factor plays, undoubtedly, an important role. He believes that he can often detect the trigger area on inspection by its pallor compared to the surrounding brain, even when a convulsion is not imminent. Moreover, he links the fact that compression of the carotid may call out a convulsion in an epileptic with the cerebral anemia that always precedes a fit. Indeed in patients whose fits are preceded by some aura, in whom, therefore, there is time for medication he believes he can often avert attacks by the administration of amyl nitrite. For these reasons also, he uses among the various forms of treatment to supplement the surgical therapy other vasodilators like nitroglycerin, hypophysin and even caffein—although the latter may also initiate a fit. The patients are also warned to avoid cold feet, cold baths, emotional disturbances, tobacco smoking, all of which may cause vasocontriction.

If the final test upon the operating table is positive, even in the absence of grossly pathological changes, the entire area of the brain is cut out—after hemostatis is dealth with—in one cone-shaped piece, the base of which is formed by the surface of the brain.

Patients whose convulsions are initiated with Jacksonian fits especially in the upper extremity, of course, present a difficult problem. Foerster has tried to avoid the excision of a part or the whole of the precentral convolution, by punching out small bits of the convolution and leaving islands of it remaining. This has not been wholly successful, however, and the patient is usually faced in such

a case with the choice between a mono—or hemiplegia and a probable cure of his fits, or no operation at all.

Fortunately, few such problems arise for Jacksonian fits are usually initiated by the presence of a tumor or some other tangible disease process. The most frequent cases of idiopathic epilepsy are those with fits arising in the frontal *Adversivfeld,* characterized by the absence of any aura and turning of the eyes, head, and body toward the side opposite to that of the field in which the fit begins.

Histologically very little pathological change can be demonstrated in the areas removed other than what is generally seen throughout the brain of a "genuine" epileptic, namely, occasional ganglion cell degeneration and glia proliferation. The sucess of the treatment must, therefore, depend rather upon the interruption of a patho-physiological process than the removal of an anatomo-pathological one.

A large number of cases of primary epilepsy remain over whose fits are absolutely atypical, or seem to arise now from one, now from another focus. These are much more difficult to handle, and Foerster has not as yet dealt with them to his entire satisfaction. All epileptics entering the clinic have encephalographies done by the injection of air into the spinal canal through a lumbar puncture. In this way he has discovered a few cases in which there seems to be a block in the region of the cisterna magna as evidenced by the fact that air will not rise above that region. Although no other signs are present besides the epilepsy, suboccipital exploration often reveals arachnoidal adhesions and their lysis may produce a relief from fits.

Because of his reputation acquired in his treatment of epilepsy, cases drift to his clinic from everywhere, and he is often faced with unusual problems. Thus he has had a considerable number of patients with epilepsy associated with hemiplegia and often feeblemindedness due to birth injury or trauma in early childhood which may be proven by encephalograms to have porencephaly. In these cases he operates to remove the entire wall of the porus even though this involves the greater part of the hemisphere until he finds himself in normal brain. He disregards entirely precautions against opening the ventricles, simply closing carefully the dura at the end of the operation. Although the immediate post-operative convalesc-

ence is often very stormy, these patients usually recover, and are usually free from fits afterwards.

In none of the epileptics that Foerster operates on is the treatment finished with the operation. It may in fact be said merely to be begun. The patients are advised, exhorted, even commanded to attend with most unrelenting care to the last details of their lives. They must be absolutely regular in their sleeping and eating. They must never allow themselves to get constipated; they must never permit themselves to be exposed to colds, wet feet, infections of any sort; they must never under any circumstances drink tea or coffee or alcoholics, they must never smoke. They must forever and always take a daily prescribed dose of "epileptol" or luminal. Indeed, if I were to make one adverse criticism it would be that attention to personal hygiene and strict medication before the operation is less careful than thereafter. On the other hand Professor Foerster, who was kind enough to invite back most of the available ex-patients in the neighborhood during my visit who had been operated on anywhere from six months up to three or four years before, was able to demonstrate cases after case to me of epileptics who had been having convulsions regularly in spite of medical treatment, and who have been completely free from fits since the operation.

COLLOIDAL GOLD SOLUTION*

The Preparation of Gold Solutions and Their Titration with Permanent H-Ion Concentration Standards

BY VINCENT CHRISTINA AND CLARA S. GREEN**

INTRODUCTION

One of the most important items in the Lange gold test for the differentiation of cerebrospinal syphilis is the necessary neutrality of the gold solution employed. It has been found extremely difficult to prepare strictly neutral solutions with consistently satisfactory results. We suggest a slightly modified mode of preparation and a simple and reliable method of titration and correction of the colloidal gold solution.

The methods generally accepted as the best for obtaining bright red, completely clear and stable solutions, are those of Zsigmondy,[1] without oxalic acid, and of Miller and his coworkers,[2] with oxalic acid. We have found the use of oxalic acid unnecessary. The investigations of Zsigmondy and his coworkers show that if it is desired to obtain a fine grained, bright red, clear, and stable solution, the velocity of formation of nuclei must be taken into consideration. The importance of the velocity of formation of the nuclei has been shown in the formaldehyde reduction method. If reduction takes place in less than a minute, we obtain bright red, clear solutions due to the large number of particles; while if the reduction of the gold is retarded, we obtain highly fluorescent and unstable solutions ranging in color from blue to purple. Zsigmondy has also found that the presence of ammonia reduces the velocity of formation of nuclei, and that CO_2 interferes with the production of red, fine-grained solutions. Therefore, every precaution must be taken to insure their absence.

In the formaldehyde method we start with acid gold chloride and

* Reprinted from the Journ. Lab. & Clin. Med., *13*, 1928, 678.

** From the Bio-Chemical Department of the New York State Psychiatric Institute, Ward's Island

1. Zsigmondy: Kolloid Chemie, 3d edition, 1920.

2. Miller, S. R. Brush, N., Hammers, J. S., and Felton, L.: Bull. Johns Hopkins Hosp., 1915, *26*, 391.

a slight excess of K_2CO_3 since it is known that reduction takes place best in a slightly alkaline medium. The following reaction[3] occurs:

1. $HAuCl_4 + 2K_2CO_3 + H_20 = Au(OH)_3 + 2CO_2 + 4KCl$
2. $2Au(OH)_3 + K_2CO_3 = 2KAuO_2 + 3H_2O + CO_2$
3. $2KAuO_2 + 3HCOOH + K_2CO_3 = 2Au + 3HCOOK + H_2O + KHCO_3$

Since the CO_2 formed interferes with the production of fine-grained solutions, the heating is continued after adding K_2CO_3 until all of the gas is removed.

To overcome the interference of dissolved ammonia and CO_2 in water, conductivity water is used in this laboratory. The titration of gold solutions with alizarin, the method most frequently employed, is unsatisfactory for several reasons. Alizarin as an indicator has too wide a range, and the color change after the addition of this indicator is not sharp enough with small increases of acid or alkali to warrant its use.

The hydrogen electrode method is indubitably the most accurate, but it is time-consuming and too expensive for clinical laboratories. The colorimetric method of determining PH value is simple and rapid, provided that correct buffer and indicator solutions are at hand. However, a certain amount of difficulty lies in the fact that these solutions are unstable, and their repeated preparation is difficult and consumes much time.

We have found Taub's[4] permanent standards in a slightly modified form satisfactory. Our permanent standards prepared according to this method were checked against the Lovibond tintometer, and Hynson, Westcott and Dunning organic standards. The gold solution which was standardized with our inorganic standards was also checked against Hynson, Westcott and Dunning organic standards and the hydrogen electrode.

PROCEDURE

Glassware—Use new Jena glassware, which has been thoroughly washed with soap and hot water. Then soak in hot dichromate cleansing mixture overnight, rinse thoroughly under tap water, next with distilled, and just before use with conductivity water.

3. Naumoff: Ztschr. f. anorg. Chem., 1914, *88*, 38.
4. Taub, A.: Jour. Am. Pharm. Assn., 1927, *16*, 116.

Conductivity Water—To every liter of distilled water (from a Stokes still) add 1 gm. of chromic acid and distill in an all-glass distilling apparatus, avoiding use of rubber stoppers and connections. To every liter of water distilled over chromic acid, add 1 gm. of barium hydrate. This may now be kept as a stock supply to be redistilled immediately before use.

Reagents—Merck's gold chloride acid yellow—1 per cent solution. Merck's potassium carbonate C. P.—2 per cent solution. Merck's neutral formaldehyde solution—1 to 40 dilution. These reagents are made up with fresh conductivity water.

Preparation of Colloidal Gold—Heat 1 liter of fresh conductivity water to 60°C.; at this temperature add 10 c. c. of 1 per cent gold chloride solution and 8 c. c. of 2 per cent potassium carbonate solution. Continue the heating until the temperature reaches 92° to 95°C., then remove the flame and add 5 c. c. of formaldehyde solution, 1 to 40 dilution. Stir briskly until a full, bright red color develops.

The necessity of brisk and even stirring must be emphasized, otherwise reduction will not be uniform. After the solution has cooled to room temperature, preferably after standing overnight, the PH of the gold solution may be determined.

TITRATIONS

The permanent inorganic standards are prepared, with slight modification, according to Taub. The following solutions are necessary for a PH range of 6.6 to 7.4:

N|2 cobalt chloride 59.497 gm. $CoCl_2 .6H_2O$ per liter of 1 per cent HCl.

N|2 ferric chloride 45.054 gm. $FeCl_3 .6H_2O$ per liter of 1 per cent HCl.

The indicator is prepared as follows: Dissolve 1 gm. of phenol red in 52 c. c. of neutral 95 per cent alcohol, add 28.5 c. c. of N|100 NaOH and sufficient conductivity water to bring the volume up to 250 c. c. Store the indicator in a Pyrex bottle.

MATCHING BLENDS

Table I indicates the amounts of chlorides necessary to give the correct colors for the standards.

TABLE I

PH	Co (c. c.)	Fe (c. c.)	CONDUCTIVITY H2O (c. c.)
6.6	1.8	6.5	11.7
6.7*	2.1	5.95	11.95
6.8	2.4	5.4	12.2
6.9*	2.95	4.15	12.9
7.0	3.5	2.9	13.6
7.1*	4.25	2.1	13.65
7.2	5.0	1.3	13.7
7.3*	6.1	0.8	13.1
7.4	7.2	0.3	12.5

The solutions are placed in test tubes of uniform length, diameter, and thickness. They are then sealed into ampoule form and sterilized in the autoclave at 15 pounds pressure for fifteen minutes to insure complete sterility. The tubes are allowed to cool overnight.

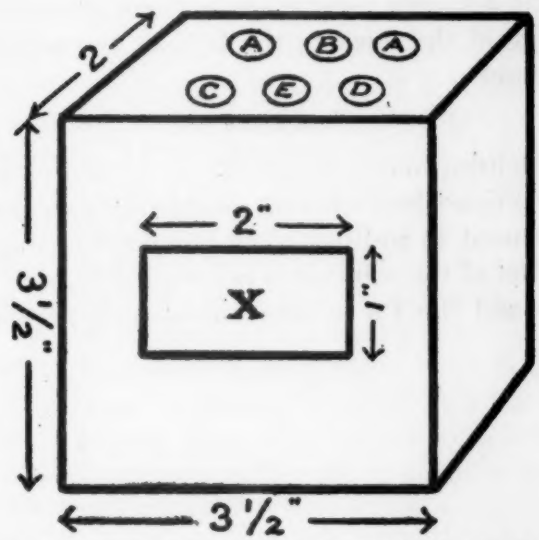

Fig. 1—X Shows Perforation with Frosted Glass Attached in Rear

A comparator block (Fig. 1) is used to make the PH determination. In making determinations the test tubes should be of the same diameter and thickness as the uniform tubes used for standards.

* Our own additions.

To 10 c. c. of the gold solution, add 0.15 c. c. of indicator and mix well. Place this tube in Hole *E*. In Hole *B* place a tube with distilled H_2O. In Holes *A, A,* place tubes containing gold solution without indicator. Holes *C* and *D* are for the PH standards. If the gold solution does not match the 7.0 PH standard, then N|100 NaOH or N|100 HC1 is added, as the case may require. If the solution shows a PH below 7.0, alkali is used for the titration; if it is above 7.0 then acid is employed. After each addition of acid or alkali to the gold solution, the contents of the tube are thoroughly mixed by inverting the tube several times.

When the unknown gold solution is matched with the 7.0 standard, the necessary correction is made for the entire volume of gold on hand. It is a practice in this laboratory to make a PH determination on our gold solutions immediately before use, as they have a tendency to become slightly alkaline after two weeks' standing.

After correction, we test the neutrality of the solution by adding 1.7 c. c. of 1 per cent NaC1 to 5 c. c. of the colloidal gold. The gold will be completely precipitated in an hour. It must give a typical curve with a known paretic spinal fluid, and no reaction, or a red-blue change at the most in the first or second tube, with a negative spinal fluid.

SUMMARY

1. A slight modification of Zsigmondy's method of preparation of colloidal gold is described, wherein conductivity, instead of triply distilled water is used, in addition to an increased amount of alkali.

2. The titration of the solution is accomplished with phenal red as an indicator, and the PH is determined with permanent inorganic standards.

A NOTE ON THE TREATMENT OF SYPHILITIC MENTAL DEFECTIVES

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During the past five years antisyphilitic treatment has been carried on routinely at Letchworth Village. From our observations, as far as efficacy is concerned, there is no choice between mercury and bismuth, nor between intravenous or intramuscular administration of the arsenical preparations. As a matter of all around convenience and practicability, in treating our cases, the majority of whom are children, we now employ X-Iodo-Bismuth and sulpharsphenamine as from neither preparation have we experienced troublesome local reactions from intramuscular injection.

The general plan of treatment has been to give a series of 6 injections of one of the arsenical preparations and 12 injections of either a bismuth or mercurial preparation. This is called a "series." A blood Wassermann is then taken and after a period varying from a few days to 6 weeks, another series is given, etc. We have treated only such cases as had a strongly positive blood Wassermann. Fifty cases have been under treatment for a longer or shorter period and the results are reported herewith.

In 21 of the 50 cases there was no significant change in the blood Wassermann. Nine cases showed an appreciable reduction in the intensity of both alcoholized and cholesterinized antigen reactions and a similar number became negative in their reactions with the alcoholized antigen and markedly reduced with the cholesterinized antigen. Eleven became negative with both antigens.

There were 10 cases with active neuro-syphilis as judged by the spinal fluid findings. Five of these showed no appreciable change in their blood Wassermann reaction. The blood Wassermann in two cases became negative with both antigens and two others became negative with the alcoholized antigen and much reduced with the cholesterinized antigen. In one case the reaction was appreciably reduced with both antigens but did not become entirely negative.

There were 9 cases with well-marked stigmata of congenital syphilis. In 7 of these the blood Wassermann remained fixed. In the other two cases the Wassermann became entirely negative in one and in the other the alcoholized antigen gave a negative reaction while the cholesterinized antigen continued to give a weakly positive reaction.

This leaves 31 cases with neither stigmata of congenital syphilis nor evidence of active neuro-syphilis. Nine of these showed no change in their Wassermann, 8 a reduction in the reaction with both antigens, 6 a negative reaction with the alcoholized antigen only and 8 an entirely negative reaction with both antigens.

There were 12 cases of acquired syphilis. There was no appreciable difference in the response to treatment between the acquired and the congenital types.

Of the 21 cases who showed no significant reduction in the Wassermann reaction with either antigen, 5 had an active neuro-syphilis and 6 had well-marked stigmata of congenital syphilis. Three of them, all cases of neuro-syphilis, showed an appreciable change in their I. Q. following treatment. Two made a gain of 10 and 20 points respectively and one lost 10 points. Six had only one series of treatment, 6 had 2 series, 3 had 4 series and 5 had 4 or more series.

Of the 9 cases who showed a significant reduction, not to the extent of becoming negative, however, in the reaction with both antigens, one had an active neuro-syphilis. None showed stigmata of congenital syphilis. None showed a significant change in I. Q. Two had only 1 series of treatment, 3 had 3 series and 4 had 4 or more series.

Of the 9 cases who showed a negative reaction with the alcoholized antigen, the reaction with the cholesterinized antigen remaining positive but much reduced in intensity, there were 2 who had an active neuro-syphilis. Five had only 2 series of treatment. The other 4 had 4 or more series.

Of the 11 cases who became entirely negative in their blood Wassermann reaction there were 2 cases of active neuro-syphilis. None showed a significant change in I. Q. Four had only 1 series of treatment. Two had 2 series and 4 had 3 series. The others had 4 series.

Conclusions

1. Changes in I. Q. are so uncommon in this group that we may not expect by the usual anti-syphilitic treatment to accomplish any radical improvement in the mentality of the average syphilitic mental defective in State institutions. It is possible, however, that such treatment prevents further deterioration.

2. As far as the Wassermann test is an indication, improvement was obtained in 58 per cent of the cases in this study. In 42 per cent there was a very marked improvement, the Wassermann becoming either entirely negative or at least negative with the alcoholized antigen.

3. Cases without active neuro-syphilis and cases without the stigmata of congenital syphilis are more likely to show favorable changes in their Wassermann reactions following treatment.

4. Cases that are likely to show favorable changes in their Wassermann reaction, will in all probability show such changes after the third series of treatment at least, and often at the conclusion of the first series.

5. As a result of this experience we are of the opinion that in dealing with long standing untreated syphilitic defectives no improvement other than a diminution or disappearance of a positive blood Wassermann reaction is to be expected. Just how much is thus accomplished is a matter of individual opinion.

COAGULATION AND BLEEDING TIME IN EPILEPSY

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Coagulation and bleeding times, particularly the latter, are relatively recent laboratory procedures of which little application has as yet been made in epilepsy.

One of the first workers in this field was the Italian investigator, Besta,[1] who studied the coagulation time in 45 cases of essential epilepsy, 25 of which were male and 20 of which were female, and a few instances of traumatic and Jacksonian epilepsy. This investigator secured blood from a vein in the arm employing the method of Arthus. He controlled his work by a study of 25 normal individuals all of whom he reports as robust and in good health.

In the majority of these cases he did not observe the relation to convulsions but in a limited number of instances he was fortunate enough to be able to make observations on the clotting power of the blood either before or after a seizure. For most of his cases he claims a coagulating power of the serum inferior to the normal. He states that his results show a gradual series in which the clotting power of the blood ranges from a little below normal to a quite inferior potency. In a general sense he says, there is a relation between the coagulating power of the blood and the occurrence of convulsions; that is, the blood shows less clotting activity in those with more frequent seizures and conversely. However, he finds no relation between the type of seizure and the coagulability of the blood. Moreover, the results of his observations, he declares without entering into particulars, have not demonstrated any variation in the potency of the serum with relation to the immediate paroxysm. In Jacksonian and traumatic epilepsy Besta finds the coagulation rate normal. He interprets his results as due to a disturbance of "organic equilibrium" in essential epilepsy which he suggests may be brought about, either by morbid processes which induce a greater destruction (than normal) of organic elements, especially of the blood, or by a mechanism of diminished liver activity through which the anticoagulating substances formed in

* From Craig Colony Laboratory.

ducing an abnormal condition of the blood, and determining the reduced coagulating potency of the serum or perhaps by a combination of these methods.

the blood are reabsorbed with less than usual rapidity, thus pro-

Dr. John Turner[2] made extensive investigations of the clotting time of the blood in this condition with the following conclusions: "(a) The average rate of coagulation time is greater in severe cases of epilepsy; (b) the rate is quickened during the period that the patient is having fits (serial seizure); (c) there is a further quickening of the coagulation rate up to 24 hours before a seizure; (d) from 24 to 48 hours after a fit there is a rebound and retardation in the rate of blood coagulation."

In 1914 Thom[3] reported some observations on the coagulation time of the blood. He successfully examined about 203 cases of which "not all were idiopathic by any means", but were the most suitable of the 950 cases that he had to select from and were free from clinical evidences of organic brain or cord lesions. These included both sexes from 10 to 60 years of age. The blood was taken during the intervals between convulsions, during paroxysms and just before or after an attack by this author personally. The method used for determining the coagulation time of the blood was that described by Lee and White.[4] In 92 per cent of this investigator's cases the coagulation time of the blood fell within the normal limits of 3 to 8 minutes; 5.5 per cent fell under the minimum time, and 2.5 per cent were over the maximum. The shortest coagulation time that he observed was 2½ minutes, the longest 14 minutes. Irrespective of the time at which the blood was taken, he found no consistant relation to the convulsion. Thom expresses the belief that the differences in opinion between Besta and Turner may have resulted from a difference of the technique in determining the coagulation time, or what is more likely that it is simply the difference which would be apt to occur in so many different individuals. From his own results he concludes: (1) That convulsions in idiopathic epilepsy should no longer be attributed to the rapid coagulation time of the blood; and (2) that there is no change in the coagulation time with reference to the convulsions.

Spangler[5] studied the clotting time in 118 epileptic patients whom he had the opportunity of observing in private practice. By means

of a Boggs coagulometer this author himself made more than 9,000 clotting time estimations. These tests were all taken in the interparoxysmal period and before any treatment had been instituted. In his earlier series of 18 instances[6] he reported the average clotting time as 3 minutes 2 seconds; the longest clotting time in the series as 4 minutes and the shortest as 1 minute 30 seconds. In his later group of 100 cases[5] he found the longest clotting time to be 6 minutes and the shortest 1 minute and 30 seconds. The average was 3 minutes 18 seconds. In discussing these results Spangler states that in his opinion it has been conclusively proven that all cases of essential epilepsy invariably show the phenomena of decreased clotting time of the blood. The fact, he says, that this time in some cases falls within the limits of what may be regarded as normal, say 3 to 8 minutes with the Boggs instrument does not prove that the epileptic's clotting is perfectly normal and not abnormally short. In only 2 per cent of his cases did the clotting time during the interparoxysmal period exceed the average normal of 5 minutes and 6 seconds.[5] In 98 per cent of the cases it fell below the average normal while in 52 per cent it dropped below the lower limit of what is considered the normal range (3-8 minutes).[7] So far as we have been able to ascertain the literature contains practically no reference to the bleeding time in epilepsy.

Since the terms and methods cited in preceding survey of the literature are somewhat variable it seems not improper to introduce a brief discussion of these factors at this point together with some of the physiological and pathological considerations which they involve.

Coagulation time as we use the term is the time required for a column of blood drawn into a capillary tube to form a thread of fibrin which will span an arbitrarily selected gap before breaking.

Coagulation consists essentially in the transformation of fibrinogen, one of the proteins of the blood plasma, into fibrin by means of a ferment called thrombin. The presence of calcium salts is necessary. The process is complicated and not fully understood; and the theories which have been proposed to explain it are many and intricate.

Normally, when blood is obtained from an ordinary skin puncture coagulation occurs in from 2 to 6 minutes, generally about 4 minutes

and 30 seconds. Many apparently healthy individuals display coagulation time beyond the usually accepted normal limit. This period is affected by temperature, the smoothness and cleanness of the instruments used, the size of the drop secured and other factors such as meals and admixture with tissue juices.

According to Todd[8] shortening of coagulation time, which in some cases may be due to deficiency of anti-thrombin, is not of much clinical significance except in relation to possible thrombosis, as in typhoid. On the other hand prolongation is important. The greatest prolongation occurs in hemophilia where it is usually from one to several hours. There is less delay although still marked, in melena neonatorum; in obstructive jaundice; and, of less clinical importance, in some leukemias and anemias; and in many infections especially pneumonia.

Aside from its value in the diagnosis of hemorrhagic diseases, estimation of coagulation time is important as a preliminary to operation when there is any reason to expect dangerous capillary oozing, as in tonsilectomies or operations upon jaundiced persons.

There are a number of methods of ascertaining the coagulation time and results by the different methods are not altogether comparable because of differences in their end-points and in the conditions to which the patient is subject. Therefore, in order to contrast our findings with those reported in the most recent investigations on epilepsy, we have adhered to a method which uses blood from a skin puncture, although this procedure is open to the criticism that it is sometimes claimed to be less reliable than a method in which blood is taken from a vein, because of the greater admixture with tissue juices that tend to vitiate the result. For this reason, in determining coagulation time we employed the capillary method obtaining the blood from a skin puncture. Our technique already described[8] was as follows. The puncture should be deep enough to insure a free flow of blood in order to lessen possible contamination with tissue juices. The first drop should always be wiped off and the second used for the test. The blood is taken up into a small capillary glass tube about 1½ mm. in diameter, and time is counted from the appearance of the first drop. Such a tube, if clean, fills readily by capillary attraction. After scratching with a file, short segments of the tube are carefully broken off at quarter-minute inter-

vals and the pieces gently separated from the remainder of the tube. When coagulation has occurred a thread of fibrin will be seen to span the gap between the tube and the detached segment. Since some definite end-point must be selected we chose as that end-point the time when the fibrin thread could be made to span a 4 mm. gap before breaking.

Todd[9] also states that coagulation time should always be supplemented by bleeding time. This is a term used by Duke[10] to designate the time required for a small cut to cease bleeding. It does not necessarily parallel the coagulation time of the blood; as it is thought to be largely dependent upon the efficiency of the tissue juice in accelerating clotting, upon the elasticity of the skin and upon the mechanical and chemical action of the blood platelets.

The normal bleeding time is usually given as from 1 to 3 minutes, although it may be as long as 8 minutes. In many severe anemias there is slight delay, usually from 5 to 10 minutes. According to Duke[10] great prolongation, often from 10 to 90 minutes or longer, appears in two classes of conditions: (a) those in which the blood plaques are very much reduced, notably purpura hemorrhagica; and (b) those in which the fibrinogen content of the blood is extremely low, as chloroform and phosphorous poisoning and certain destructive diseases of the liver with a hemorrhagic tendency. Contrary to common belief the bleeding time is usually not prolonged in hemophilia. In surgery the bleeding time can advantageously be studied in connection with the coagulation time as a routine procedure before operation, but it should not be made to replace it.

In determining the bleeding time we again obtained blood from a skin puncture employing the following technique which is a slight modification of Duke's method: After proper aseptic precautions, the usual puncture, as for a blood count, was made with a blood lancet. The site of the puncture was then touched at quarter-minute intervals with a piece of absorbent paper until the blood flow had ceased. Estimations were further refined by calculating, from the size of the last two spots on the blotting paper, the approximate point at which this cessation had occurred instead of accepting an arbitrary end-point. As we have already indicated[8] in our experience with epileptic individuals we found it much easier to estimate bleeding time from a lancet puncture than from a needle puncture

since blood did not flow freely from a wound of the latter type even when the needle was driven deeply into the tissues.

In the course of this investigation on epileptics, coagulation time was studied in 509 instances and bleeding time in 634 cases. These individuals were carefully chosen so as to eliminate acute infections such as pneumonia as well as chronic infections such as tuberculosis since these, as already indicated, tend to influence the coagulation time. All were males and all had grand mal seizures while some exhibited petit mal attacks in addition. Coagulation time observations were made in duplicate on the same individual in 400 cases and in triplicate in about 40 instances. Within the limits of experimental error (½ minute's difference) the results obtained from the same individual in the different tests were in agreement.

In the 509 cases studied the average coagulation time was found to be 2 minutes and 33 seconds. Our shortest coagulation time was 30 seconds and the longest was 7 minutes. In 71.2 per cent of these cases the coagulation time fell within normal limits while in 28 per cent it fell below the normal and in only 0.7 per cent did it exceed the maximum normal limit.

As has been pointed out Besta maintains that while the potency of coagulation of the serum is diminished in idiopathic epilepsy, it is not altered in Jacksonian or traumatic epilepsy. In order to contrast the findings in essential and non-essential epilepsy we were able to select from the cases studied a group of 253 instances of essential epilepsy and another group of 63 cases of non-idiopathic epilepsy and to compare the results obtained with these two groups. These cases were selected from the total number studied because they could be definitely catalogued under either one heading or the other. In the remaining cases the classification was more difficult because the cases were not so clear-cut and was, therefore, not attempted. With the idiopathic series the average coagulation time was 2 minutes 17 seconds while in the non-idiopathic series it was 2 minutes and 18 seconds. Of the former group 68.8 per cent fell within normal limits, 29 per cent were below the normal and 1.6 per cent above it; while of the latter group 74.2 fell within normal limits, 25.8 per cent were below normal and none above it. These findings show little difference between the two types of epilepsy selected since the coagulation time for both corresponds very closely

and is well within the limits of experimental error. There is however, a slight tendency for a greater proportion of the idiopathic cases to fall below the normal than of the non-idiopathic ones.

Most of the above determinations were made during the interparoxysmal period, but we were fortunate enough to obtain coagulation and bleeding time estimations in 36 instances from 30 seconds to 3 hours and 10 minutes after the convulsion; the average time of these tests was 14 minutes and 50 seconds after the attack. In these 36 cases the average coagulation time was 2 minutes and 24 seconds. The shortest reading obtained for coagulation time was 1 minute and 20 seconds and the longest was 7 minutes. Ninety-four and four-tenths per cent of the cases fell within the normal limits as regards coagulation time and 5.6 per cent fell below the normal minimum. The coagulation time tends to vary immediately after the convulsion. In a number of these the retardation and rebound described by Turner was observed.

In the 634 instances in which the bleeding time was determined, the latter was found to average 2 minutes and 17 seconds. Our minimum bleeding time was 30 seconds while our maximum was 10 minutes 30 seconds. The bleeding time in our observations fell within normal limits in 63.5 per cent of instances and below the normal minimum in 23.2 per cent of cases while it exceeded the upper normal limit in only 13.3 per cent of cases. A contrast between the results obtained in idiopathic and non-idiopathic epilepsy, similar to that obtained for coagulation time, was also secured for the bleeding time. Here we were able to gather a collection of 347 cases of idiopathic epilepsy to compare with an aggregation of 76 non-idiopathic individuals. As with coagulation time, the results for the bleeding time showed little difference for the two divisions. The average bleeding time for idiopathic individuals being 1 minute and 54 seconds as against 1 minute and 48 seconds for non-idiopathic. In the idiopathic cases 60.4 per cent came within normal limits, 24.8 per cent were below normal and 14.8 per cent were above it; in the non-idiopathic cases 63.2 per cent came within normal limits, 15.8 per cent were below normal and 21.0 per cent were above it. Again these results correspond very closely and their variations fall well within the range of experimental error. As before there is a slight tendency for a greater percentage of the

idiopathic group to fall below normal than occurs in the non-essential series. In the 36 cases in which we were able to make post-paroxysmal observations the average bleeding time was 54 seconds; the shortest bleeding time in this group was 30 seconds and the longest 1 minute 30 seconds. Only 55.6 per cent of these instances fell within the normal range with respect to bleeding time, while 44.4 per cent were below the normal threshold. The increase in the percentage of cases in which the bleeding time falls below normal immediately following an attack may perhaps be due to a constriction of the peripheral vessels following a paroxysm.

In general, our results are in keeping with the findings of both Turner and Spangler, but differ appreciably from Thom and are in direct conflict with the results of Besta who finds in the majority of cases a coagulating power of the serum inferior to the normal, that is, the rate of clotting is lengthened or the coagulation time is above normal. It should also be borne in mind that Thom and Spangler have adopted a normal range for coagulation time of from 3 to 8 minutes whereas we have followed Todd in selecting his recent standard of from 2 to 6 minutes. Consequently it follows that if we had adhered to the scale of these two authors the number of cases in which we should have found the coagulation time to fall below the accepted lower limit of the normal would have considerably exceeded our present percentage. This fact may account for the greater number of instances which Spangler found below the normal threshold but it is difficult to reconcile Thom's low percentage of sub-normal incidence with it.

In connection with the theory suggested by Besta of lessened liver activity in epilepsy it is interesting to note that Myerson,[11] Thom[22] and ourselves[13] have reported an alteration in the normal brain-liver weight ratio in this condition.

A summary of the findings just presented is given below in tabular form.

Conclusions

From the investigations on the coagulation and bleeding time described in this article we draw the following conclusions:

1. In the 509 individuals studied the range of the coagulation time exceeded the limits of the normal range.

COAGULATION AND BLEEDING TIMES OF EPILEPTIC PATIENTS
(Summary of authors' findings)

	COAGULATION TIME					BLEEDING TIME				
	No. of Cases	Average results	Per cent Distribution			No. of Cases	Average Results	Per cent distribution		
			Below	Normal	Above			Below	Normal	Above
Total cases	509	2′:33″	28.0	71.2	0.7	634	2′:17″	23.2	63.5	13.3
Idiopathic cases	253	2′:17″	29.6	68.8	1.6	347	1′:54″	24 8	60.4	14.8
Non-idiopathic cases	62	2′:18″	25.8	74.2	0	76	1′:48″	15.8	63.2	21.0
Post-paroxysmal cases	36	2′:24″	5.6	94.4	0	36	:54″	44.4	55.6	0

2. In 71.2 per cent of these cases the coagulation time fell within the normal limits, in 28 per cent it fell below the normal and in 0.7 per cent it fell above the normal.

3. The average coagulation time fell below the normal average.

4. The average coagulation time in idiopathic and non-idiopathic epilepsy coincides within the limits of experimental error.

5. There is a slight tendency for the coagulation time to fall below normal in a greater proportion of idiopathic cases than non-idiopathic ones.

6. The coagulation time tends to vary immediately after a seizure.

7. In the 634 instances studied the range of the bleeding time exceeded the limits of the normal range.

8. In 63.5 per cent of these instances the bleeding time fell within normal limits, in 23.2 per cent it fell below the normal and in 13.3 per cent it fell above the normal.

9. The average bleeding time fell above the normal average.

10. The average bleeding time in idiopathic and non-idiopathic epilepsy agrees closely within the limits of experimental error.

11. There is a slight tendency for the bleeding time to fall below normal in a greater proportion of idiopathic cases than non-idiopathic ones.

12. There is also a slight tendency for the bleeding time to fall above normal in a greater proportion of non-idiopathic cases than idiopathic ones.

13. Shortly after a seizure the bleeding time seems to be reduced.

14. In our observations the average coagulation time in epilepsy tends to fall below normal whereas the average bleeding time tends to fall above normal.

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PREVENTIVE WORK UNDERTAKEN DURING THE YEAR AND FUTURE PLANS

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It may be of interest to those attending this conference to hear of some of the work which falls under the head of prevention as carried on by the Department with the assistance of the State institutions during the past year. Although the division of prevention is not as yet designated as such, certain personnel in the Department is carrying on this work.

At this time it is thought best first to report quite definitely what has been done during the year, chiefly of the work done with children, and secondly to discuss briefly what appear to be logical plans for some of this work in the future.

The problem with adults will be discussed separately, both because methods are different with adults than with children and because, while the child guidance work has been started, that with adults has not yet been begun in a specific way by the Department.

In mental hygiene work with children, the Department has conducted child guidance clinics in many parts of the State during the year. These clinics were originally started for the examination of mental defectives. Now, however, there are child guidance clinics organized similarly to those begun in various parts of the country by the National Committee for Mental Hygiene, but modified to meet local situations and in accordance with personnel available.

During the year ending July 1, 1927, the latest period for which figures are available, 3,063 children were examined in our child guidance clinics, of these 2,720 were new cases and 343 return cases. Ninety per cent of these children were under 16 years of age. The number will be considerably exceeded this year.

During the school year about 48 clinics were held every month. These were conducted in 47 different counties of the State. Fifteen counties have no clinics. There were in addition to the clinics held every month, 61 clinics conducted occasionally as needed.

The procedure in the child guidance clinics is as follows: Request comes for a clinic either through the county agent, the school nurse,

the school superintendent or some other person or group. If the community is of proper size and if other conditions are satisfactory, the clinic is started. A population of about 20,000 will furnish sufficient cases for a clinic once a month.

The place where the clinic is held in the town, depends upon space and surroundings. Often it is in a school building, sometimes in a hospital, a courthouse, a community center or elsewhere.

A worker who lives in the community but is not directly under the Department, takes general charge of the clinic. She may be a county agent, a school nurse, a visiting teacher or a special class teacher. She is advised concerning the types of children that should be referred to the clinic, including those who are backward, delinquent, defective, unstable or problems for some other reason. She makes all appointments and takes the history on a form prescribed by the Department; she sees to it that the mother of the child is present to be interviewed. She also undertakes responsibility for carrying out the recommendations or designates another worker to do it.

In the examination of the child, the physician does the physical examination and the psychiatric examination; he goes over the history with the mother and interviews the teacher and others, if necessary. The field agent who is a psychologist, does the psychometric test.

The physician records the full history, although briefly. He makes a summary and recommendations. The recommendations fall under the general heading of (a) physical treatment, (b) educational guidance, (c) social guidance, the latter including supervision, recreation or occupation.

The history is completed by the physician after the clinic and sent to the Department in Albany. Here it is copied, including the summary and recommendations. One copy is returned to the physician, one to the local worker in charge of the clinic, one to other agencies who may have referred the child, and one to the Education Department, if the child is mentally defective and has been recommended for an ungraded class.

The local worker who takes charge of the case is also sent a follow-up sheet on which she reports how the child has progressed. She returns the child to the clinic as often as is necessary and a return sheet is added to the history.

There are five field agents with the Department who, under the direction of the physician in charge, assist at the clinics. The field agents are primarily psychologists who do mental testing. One field agent is stationed in Buffalo, one in Syracuse, one in Watertown, one in Hudson and one in New York City. These workers report to the Department on forms as follows: They make a weekly report of each clinic, including the number of cases seen and also any suggestions pertaining to local conditions. The field agents also send a monthly report. The report gives the number of cases at the clinic, new and returned; the sex; the sources from which the children are referred, whether schools, social agencies, courts, physicians, parents or elsewhere; and the reasons for the examination, whether chiefly for educational guidance such as placement in special class or other training; whether for social direction and supervision or for commitment to an institution or placement in a private home; likewise whether the problem is chiefly a health problem where there are physical defects or disease. The physician and the field agent can conduct on the average about 12 clinics a month.

The types of children seen at these clinics, cover a wide range. In one broad group, physical factors are a very important underlying cause of the problem, such as endocrine disorders; epilepsy; nervous states resulting from malnutrition; physical defects; lethargic encephalitis; a few syphilitic cases and some cases the result of accidents, injuries and illness.

Cases where the problem is chiefly psychiatric without marked physical disorders, are varied. There are a few psychotic children; a number of psychoneurotic cases; cases presenting various disorders of conduct, either in the home, school or community; a number of psychopathic cases; and a large number who are maladjusted, the result of faulty environmental influences. Then, there is the group included under the general heading of mental deficiency. These are of various types from those of low grade institutional types to the borderline cases; those for ungraded classes and those with conduct disorders. In addition, are those school problems of so-called dull normal children. There are a few children with special abilities or disabilities and a few problem children with exceptional intelligence.

The personnel carrying on the clinics is as follows. In the field

are the psychiatrist and assistant psychiatrist and five field agents. In the Albany office are an assistant secretary assigned to this work, a clerk in charge and two stenographers. The work is directed by the Commissioners. Excluding them, there is a personnel of 11 in all in the Department. In addition, there are 20 physicians either from the State hospitals or from the State schools or from private practice, who give a certain amount of time to these clinics. This makes the total personnel 31. If to this were added the local workers who, although not with the Department, assist at our clinics, take histories and do follow-up work, we have a considerable increase in personnel. Then, of course, there are many other agencies indirectly interested, such as local welfare organizations looking after children, church organizations and others. The monthly schedule is sent out to about 800 people. Of these, about 400 are superintendents or principals of the public schools of the State.

Some plans for the future of the child guidance clinics, including their expansion, may be discussed.

The care of the child subsequent to the examination at the clinic, has not been satisfactorily worked out. A plan to turn these children over to local agencies has only been partly successful. It will probably be necessary to station a psychiatric social worker with the physician and psychologist, thus making a complete child guidance group.

A later undertaking will be to go over the records of the children in each community served by the clinics, and select those for whom certain recommendations were made, such as for ungraded classes, manual education, or community guidance where need is shown. It will then be necessary to encourage local school principals, boards of education, town or county supervisors to put in the required facilities for these children. Results of course, will come very slowly in this direction, in most communities.

It may seem that a clinic one day a month in a locality is not sufficient to meet the needs. It must be remembered in this connection, however, very often there is little serious difficulty with the child himself. He may be somewhat slow or dull or unstable. The difficulty is in the situation which this creates. Parents and teachers require information as to how to handle the child. This information may be given by the psychiatric social worker after the case

has been studied and the situation handled without too many interviews with the child.

The organization of the work and the distribution of the personnel is an important consideration. As the work is developing, the psychiatrist assigned to each district is, in a way, a district psychiatrist, at least in respect to these clinics. For example, in the western part of the State, there is a group of 12 counties where clinics are now conducted by the assistant psychiatrist. There are 14 regular and 17 occasional clinics held in these counties. The psychiatrist conducting these, has an office in Buffalo. A larger office wherein can be included space for the psychologist and a psychiatric social worker, a stenographer and files, may be necessary later. The psychiatrist gets assistance from State institutions in conducting the clinics and can take on new clinics as required. The psychiatric social worker will supervise the social work in the various counties in cooperation with local agencies. The psychologist can do special work in the schools, advise in regard to grading, etc. The psychiatrist is in a position to carry out a general educational program in the community or any other activities directed by the Department.

Such an organization in certain districts for mental hygiene work is comparable to the community health work of the State Department of Health. New York State is divided into 15 health districts by the State Department of Health, and over each district is a district health officer assisted by a district health nurse. Such an officer has from three to five counties under his supervision. He has advisory supervision of the local health officers, advises regarding various public health conditions and represents the Department. In this district may also be a varying number of county nurses, Red Cross nurses or nurses representing other national or private organizations.

Experience may show that the Department of Mental Hygiene will wish to district the State eventually for this preventive work, so as to have psychiatrists in charge of the community work of certain districts. A few districts will be sufficient because of the amount of assistance available from the various State institutions. The office force, however, as indicated above, may require expansion, as it may be desirable to decentralize the clerical work.

The work with children goes beyond the public schools, and includes children appearing in children's courts, children cared for by welfare agencies for adoption, those in institutions for behavior difficulties, or because of improper guardianship by parents. The work includes establishment of ungraded classes and other special classes, the training of special class teachers, school nurses and in fact all teachers. Likewise, advice to parents, the development of community interest in this work with children, such as camps, playgrounds, big brother and sister organizations, are necessary.

Present indications are that child guidance work and vocational guidance will extend from public schools to the high schools and in fact, mental hygiene work has already extended to colleges. It is apparent that the State cannot be expected to undertake all of these activities, nor is it a proper State function to do so. Other State agencies, of course, will in time doubtless assist in this movement, such as the Department of Education, likewise county agencies and private agencies will contribute. This Department, however, will have extensive activities in the field and will be in a position to advise regarding those mental hygiene activities and psychiatric undertakings now before the public, which it does not directly conduct.

Certain extended activities in child guidance are necessary, particularly in disseminating general information. A standardized set of lectures should eventually be given in the normal schools. Lectures should be given before the school nurses of which there are about 404 in this State. In fact, this fall lectures in mental hygiene will be given before this group by the staff of the Buffalo State Hospital. Lectures should be given to the special class teachers of which there are 732 in this State. Lectures before Parent-Teachers' Associations are already being given in a number of instances, either by the psychiatrists in the field or through the Department or through the State institutions.

Pamphlets on various topics dealing with children should be distributed by the Department, such as those on nervousness, disturbances of speech, mental retardation, disorders of conduct, habit formation and many other subjects. These may be distributed to all clinics held by the Department and in health centers and towns so reached and likewise through the mailing list of clinic schedules.

A mental hygiene bulletin might well be published by the Department either periodically or regularly, which besides disseminating general news, might deal with some special topic in child guidance or some other phase of mental hygiene, with each issue.

The subject of prevention of mental diseases, aside from the work to be done during childhood, which seems very obvious, is not a simple problem. As a matter of fact, prevention of mental diseases is a vast enterprise and we have no exact way of knowing what can be accomplished; certainly very little in some individual cases; and likewise a great deal in some beginning mental maladjustments.

However, it is probable that in one way or another very considerable can be done in the aggregate. For example, the statistical bureau of this Department shows that an underlying organic cause is at the basis of about 54 per cent of all admissions to our State hospitals. Preventive work is possible in some of these cases. Much further progress may be made, not only in the treatment but in the prevention of those psychoses arising from syphilis, a group which once seemed so hopeless in respect to cure. The underlying nature of arteriosclerosis may be better understood eventually from the standpoint of body metabolism and chemistry, and preventive measures may here be possible. The toxic and exhaustive psychoses resulting from protracted illnesses may be prevented to a considerable extent through every improved method of treatment, including the use of serum and other measures during the acute illness. Illnesses such as typhoid, diphtheria, are much less prevalent than at one time, and therefore, the residuals of these diseases, including mental symptoms, are less in evidence. This may in time be true of various other illnesses.

In respect to the purely mental causes of the psychoses, prevention is much more uncertain than in the physical spheres. Many people, including psychiatrists have often stated that the repressive influences of society upon the individual, thus limiting and hampering his freedom, lay the foundation for certain mental disorders in later life. Certainly relief from some of those repressive influences are present with young people of the present day. This feeling on their part is doubtless an expression of liberalism which has swept over the world, particularly during the past two decades. It remains to be seen what effect, if any, will result from this chang-

ing attitude of many people in respect to the prevalence of mental diseases in coming generations.

Certainly there are some factors in the field of mental hygiene which we as psychiatrists understand very well, but about which the laity have a very hazy or erroneous ideas. For example, the laity have a very distorted view in respect to the inheritance of mental diseases. Many people think that it is always an inherited condition, unavoidable and evidences of it may appear at any time in children with this inheritance. This belief often causes much unnecessary worry and unhappiness in many ways. A sane and healthy point of view on this subject is needed for the people in general. The over emphasis on the significance of heredity probably came from certain studies in biology and eugenics of an earlier period, including the work of Galton.

People should be taught that there is hygiene in the mental sphere as well as in the physical. They should know that protection from undue mental strain is quite as necessary as is rest and care for the person who has heart disease. People should be taught that mental conflicts are unhealthy and that it is best to discuss them frankly with the proper people rather than to brood over them to the point of mental disorder.

People hear much in conversation regarding inferiority complexes, repressions, conflicts, sublimation, regression, self-expression and other psychiatric terms. It is desirable that the meaning of these terms be conveyed to the public through proper psychiatric sources, than through some of the sources from which they now receive it.

People may be given wholesome advice regarding the educational management and guidance of their children, a field where much lack of wisdom and knowledge is shown among all classes at the present day. Many other topics for lay instruction will occur to any experienced psychiatrist.

The subject of prevention of mental diseases might be discussed at much greater length at this time, but most of the ideas and plans which might be suggested are familiar to the majority present. The establishment of mental hygiene clinics, a campaign of information for the public through pamphlets, leaflets and lectures, these are the obvious measures to be taken. A movement in mental hygiene

comparable to that of other wide educational movements, such as the National Tuberculosis Association, for example, which has helped to bring about modern, hygienic living, will doubtless be undertaken both by State and national agencies in the future.

At the present time there is much interest in mental hygiene, and the movement goes far beyond what can be done by any one State. We may however, in this State advance the work and advance policies in preventive work in mental hygiene activities, just as the State in the past has been well abreast of the times, both in the field of scientific psychiatry and in the care and treatment of patients suffering from mental diseases.

OUTLINE OF A COMPREHENSIVE COURSE IN MENTAL HYGIENE

BY HARRY A. STECKEL, M. D.,

DIRECTOR OF CLINICAL PSYCHIATRY, BINGHAMTON STATE HOSPITAL

I think it is admitted by all who have given any thought to the mental hygiene problem that any comprehensive program aimed at the prevention of mental disorder must include a system of education which will reach those groups of individuals who are most vitally interested in childhood training particularly, and in human engineering generally.

Broadly speaking, therefore, every effort must be made to acquaint parents, teachers and all types of social workers, with the fundamental principles of mental hygiene. How best to do this has been a subject of much concern to me for several years, and I have spent much time and thought upon developing the outline which I here present.

I freely admit that I am far from perfectly satisfied with the results thus far obtained, and I submit it in the hope that free discussion may be had, and that from such discussion and constructive criticism new ideas may be forthcoming to improve the outline for future use.

The world of science moves so rapidly, so much new knowledge is coming to us daily, changing conceptions of mental disorders crowd in upon us so steadily, that what may appear to be a fairly satisfactory exposition of a subject today, becomes obsolete and inadequate for tomorrow.

In order that we may begin on common ground, I think it might be well to make an effort to define the term mental hygiene as it pertains to the subject matter of this paper.

I quote, therefore, from one who I think is recognized by all as an authority on the subject, namely, Dr. Frankwood E. Williams, who says: "In attempting to define mental hygiene, one must differentiate between (1) mental hygiene as an organized social movement and (2) mental hygiene as an art in the application of knowledge derived from certain basic sciences to the maintenance of individual mental health. In the latter sense, mental health should not

be interpreted too narrowly as merely freedom from disease, but broadly in the sense of behavior and the ability to attain and maintain satisfactory relationships.'"[1]

It will at once become evident, with so comprehensive a problem to be taken in hand, how much ground must be covered in attempting to impart only the fundamental principles of this art of mental hygiene.

It must also be self-evident that no one individual could be expected to master all of the sciences applied in the art in question, but in order to understand the very meaning of mental hygiene one must have at least some insight into the practical application of the sciences to the problems.

As the groups concerned in the mental hygiene problem have such a varied educational background, it is impossible to formulate a definite text which will serve all groups alike, but, the approach is much the same for all groups, and with the exercise of a little judgment in amplifying or curtailing the general content, the material here submitted may be made applicable to almost any level of educational preparation.

The subject matter outlined here was used for a group composed of parents, teachers, social workers, public health nurses, and college students, and was instrumental, I believe, judging from the examination papers submitted, in getting over to all individuals of the group, the significance of mental hygiene in its broadest sense.

It is true that those who had the advantages of a college education found much material which was already familiar to them, but its application to human behavior was made more clear to them, and for those who had not the advantage of a college training, it became a most essential part of the course.

As the course was given for two college credits, a total of 16, 50-minute periods, were devoted to the work, each of two semesters. About 80 minutes of each meeting (two 50-minute periods) were consumed for the didactic lecture, the remaining 20 minutes being utilized for the reading of book reviews assigned to members of the class, or for general discussion.

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In order to indicate the detail with which each subject was discussed, I am dividing the material into the requisite number of

periods, and after each topical outline I shall discuss briefly the reasons why the material was included in the course, and shall also indicate under bibliography the sources from which the subject matter was obtained.

I

Abnormal mental phenomena in history.[2]

Explanation of mental disorders in different historical periods.

Brief history of institutions for the care of mental disorders.[3]

Brief sketch of the development of clinical psychiatry from Kræpelin[4] to the present day, including the views of Meyer, Freud,[5] Adler,[6] Kempf,[7] Kretschmer[8] and Bleuler.[9]

History of the mental hygiene movement, with special reference to the work of Dorothea Dix,[3] Clifford Beers[10] and Dr. Thomas W. Salmon.

It might be argued that much of this material has no practical value to the student so far as the application of mental hygiene to every-day behavior problems is concerned, but I think it is worth while, as it tends to stimulate interest on the part of the student and emphasizes the rapid strides which have been made in the twentieth century in our understanding of mental reactions. It tends further to bring out the reason why so much superstition and stigma still unfortunately clings to the subject of mental disorder, and assists I think in dispelling it to a degree at least. Furthermore, I feel that the mention of the three outstanding personalities in the promotion of the mental hygiene movement is, if nothing more, a fitting tribute to, and an indication of our appreciation for their efforts on behalf of mankind.

II

Human behavior and a brief review of various views regarding its control.

Reasons why anthropology, biology, embryology, anatomy, physiology, psychology and psychiatry must be considered in the matter of understanding human behavior, stressing the idea of man operating as an integrated whole.[11]

It will be noted from the material used in the second period that the biological approach to an understanding of human behavior is taken. If human behavior is the result of drives coming from within the individual, plus forces arising from the environment, it is plain to see that we must attempt an understanding of the source of

these drives, as they arise in the human body, as well as make an effort to study the development of social forces through all the changes of the centuries.

The special point made in this lecture is the fact that for hundreds of years man has been making laws to govern man, to control his behavior, with little or no fundamental idea of what man really is. If we would understand why man reacts to certain stimuli as he does, we must know something about his history; what he had developed from, what parts of his system are phylogenetically oldest and therefore more potent in their influence than the younger elements. If the frontal lobe is the latest acquisition of our cerebrospinal system, it is safe to presume that it plays only a minor role in the total reaction of the individual. Older by thousands of years, for example are the emotions and therefore much more to be reckoned with than the intellect.

III

Consideration of the four levels of adjustment, i. e., physical or chemical, physiological, neurological or psychological, and social.

Brief history of our present understanding of the development of man.[12]

Human embryology—stressing particularly the development of the vegetative and the cerebrospinal nervous systems.[13 14]

If man functions as an integrated whole we must not lose sight of the fact that each individual cell operates on a chemical basis, and if the chemistry of even a small group of cells is disturbed, it will have a very definite influence upon the behavior of the integrated whole. The first living organism, as do some of the unicellular organisms of today, apparently operated on a purely chemical basis, with no differentiation of function of any special part or parts.

As we ascend the scale of animal life we get an ever increasingly pronounced differentiation of function; after millions of years a primitive nervous system; and finally we find man not only a beautifully intricate, but perfectly synchronized chemical and physiological organism, but have added to this a cerebrospinal system which renders possible the finest kind of adjustment to an increasingly complex environment. More striking still is the fact that man in his short span of years, passes through much the same process

of evolution, starting as a single cell, at certain stages of his embryological life having gill slits, etc., living his early life largely upon an emotional basis, and often not until he reaches rather mature years is he able to utilize to good advantage his frontal lobes. Some of us unfortunately never reach that sublime stage of evolution or civilization, if you wish to put it that way. We do so many things upon an emotional basis, and then along come our frontal lobes to rationalize our behavior, and usually to our complete satisfaction and approval.

IV

Brief review of our present knowledge of the endocrines and their relationship to growth, and to physical and mental reactions.[15 16]

One's first impression of the subject matter of this period would be that we are getting too far afield and that after all we do not know much about these glands. A little deliberation, however, I think will soon make obvious the necessity for including at least a brief presentation of our present knowledge on this subject, in building up a comprehensive understanding of the many factors which influence human behavior.

When we see how the physical make-up of an individual influences his mental attitude; how his sex drives may determine his social status, to say nothing of the influence of the endocrine glands upon the emotions, and vice versa, we are led to the position that even so small a thing as a pituitary gland may shape our destiny, "rough hew it as we will".

V

Discussion of heredity and the more recent conceptions of its influence upon human behavior.[17 18 19 47]

Review of interesting family histories.

Mental defect and its problems.[20 21]

It has seemed to me that it is high time we were getting away from the time-worn idea regarding the transmission by the germ plasm of mental disorders, or at least predisposition thereto. Admitting that physical make-up is transmitted, and that personality types tend to depend upon certain definite physical types, it must be equally freely admitted, that all pyknic individuals do not

develop psychoses, and that after all much depends upon early training, or life experience, plus environmental stress in the actual production of the psychoses. As we can do little or nothing in the matter of regulating heredity, let us stress the environment and training, and thereby do some real constructive work in the field of mental hygiene.

In reviewing the family histories stress was placed upon the fact that the outstanding factor very frequently is the environmental situation, this in turn being influenced by the psychotic ascendants to the production of psychoses in the descendants.

In dealing with mental defect the matter of social control was stressed, particularly with reference to early recognition and proper training to socialize the individual in spite of the defect, and thus prevent asocial and anti-social conduct.

The need to differentiate actual mental defect from difficulty in making satisfactory school progress, due to emotional maladjustment was also forcibly brought out. Too much stress cannot be laid upon the oft found fallacy of utilizing the result of an intelligence test in evaluating the possibilities for adjustment of a child, as well as of an adult. The intelligence quotient is only one measurement of just a fraction of the total personality, and must not be considered the final and only test for social adjustment.

VI

The customs of mankind, with review of evidence of primitive ideas persisting in present thought and behavior.[22]

Mythology and folk lore.

Development of society as it is constituted today.

Fear and superstition, religion, symbolism.[23 24 25]

This material leads up quite naturally to the idea of a racial subconscious, the influence of which helps to explain certain facts of human behavior. It serves too, as an introduction to the subject matter of the next lecture and tends to dull the edge of skepticism with which the Freudian theory is so often met.

We get here some overlapping with courses in psychology and sociology, but the general viewpoint is not exactly the same, and the application of the facts entirely different.

VII

Psychoanalysis; Freudian psychology; universal complexes; symbolism of dreams; purpose and use of analysis. [6 26 27 28 29 30 31 32]

Although it must be admitted that Freud has in his enthusiasm somewhat exaggerated the role of the unconscious in mental mechanisms, and in human behavior generally, he has certainly contributed much to a better understanding of human psychology, and no course in mental hygiene would be complete without an exposition of at least the outstanding points of his premises. A better understanding of psychological and psychiatric terminology may also be gained by a brief review of his theories.

Some knowledge of the so-called universal complexes is furthermore essential to a better insight into the developing mind of the child, which subject is taken up in one of the later lectures of the course.

VIII

The eighth and last period of the first semester is occupied with a review of the material covered thus far.

Free discussion of any obscure points is invited, and in order to help the student crystalize the salient points in his mind, and give him a visual impression as well, lantern slides outlining the high spots are used at this time.

It will be evident that what we have done thus far, is simply to build up a foundation of general knowledge culled from many sciences, upon which we may erect the superstructure which we choose to designate as the art of mental hygiene.

We have tried to give the student some understanding of what man is, some insight as to what he has gone through in ages past, thus opening the way to a better understanding of what may be expected of man in his present state of development, physically, as well as mentally.

Regardless of the student's backgrounds so far as educational advantages are concerned, it has been my experience that he is now able to see quite readily what we are driving at in this matter of understanding and moulding, if not ultimately controlling human behavior.

IX

Discussion of the organic mental disorders.[11]

Classification and symptomatology with brief presentation of cases of the commonest forms, with special stress upon encephalitis lethargica[33] and general paralysis.

There has been some question as to the advisability of including the material outlined above, on the grounds that it is not pertinent to the subject of mental hygiene. I have persisted in using it, however, for several, to me, adequate and justifiable reasons.

First of all by discussing the organic conditions, we are able to indicate how changes in the brain itself may upset the normal functioning of the individual, thereby producing psychotic manifestations in anyone, no matter what the make-up, the hereditary background, or the stamina of the individual may be. This tends to dispel the stigma attached to mental disorder, and puts it on a more concrete basis in the minds of the student.

As many of the students are now, or are planning to become teachers, the matter of the post-encephalitic behavior disorders are discussed, so they may be able to recognize such cases, if they should come under their notice. These cases also demonstrate the important role of the emotions, aside from any intellectual disturbance, in the adjustment and behavior reactions of the child.

At last it affords the opportunity to discuss in some detail neurosyphilis which, with its 12 per cent to 15 per cent of first admissions to our hospitals, and our ability by early recognition and effective treatment to prevent its ravages, constitutes one of the most hopeful fields of mental hygiene.

X

Manic-depressive disorders. Presentation of case material from records, with discussion of mechanisms involved.[11 31]

XI

Schizophrenic disorders. Presentation of case records with analysis for probable mechanisms.[4 11 34]

XII

Psychoneuroses and psychoses with psychopathic personality. Case records and discussion of mechanisms.[11 16]

Undoubtedly there are those who feel that it is not good policy to discuss definite mental disorders in these mental hygiene courses,

because, it is argued, it tends to stimulate morbid introspection on the part of the student. There have been nearly 200 students who have completed this course, and I have yet to see any cases where such a morbid attitude was developed, in fact, it has been my observation that quite the reverse has been true.

I feel it is essential to discuss the psychoses at least in a superficial way in order to emphasize the fact that mental disorders do not arise over night, but are insidious in their onset, and that they have been found to represent very often only an exaggeration of the personality traits, which for the particular individual have been considered normal. Furthermore, in presenting the cases, only such cases in which good anamneses were available were used, in order to show personality defects in early infancy, or demonstrate environmental factors influencing the development of the personality, as well as operating as precipitating causes in the psychoses.

Furthermore, the case material emphasizes the narrow margin which exists between, what we think of as normal behavior and what we term psychotic or abnormal behavior; the day-dreaming types merging into the autistic thinking of schizophrenia, and the unstable personalities, showing swings of mood from depression to elation, merging gradually into the definite manic-depressive disorders.

It seems to me that an exposition of the four types outlined above is helpful in dispelling the stigma and superstition which is so common with reference to mental disorders.

XIII

Psychological development in the child.[35 36]
Mental hygiene in the home and in the school.[38 48]
The pre-school age.[39]
Development of personality.[37 40]
The problem of the delinquent child.[41 42 43 44]
The child guidance clinic.
Lantern slides and case records to illustrate subject matter of lecture.

For this lecture I have used slides made from the mental hygiene charts, which are published by the National Child Welfare Association, which illustrate in non-technical terms the psychological development of the child and emphasize some common training defects.

If our premise is correct, that the foundations of faulty personality and consequent mental invalidism in adult life are laid in childhood, then the material just indicated is most justifiable in a course of this character.

XIV

Psychiatric conception of criminality, dependency, and other social ills, with suggestions for possible correction.[45 46 49 50 51]

The need for psychiatric insight in social work.[52]

The more modern technique in the management of social problems.

The material of this lecture brings out the psychogenic factors at work in many of our behavior disorders, or faulty mental attitudes, which are labeled usually only from a sociological standpoint. It emphasizes the environmental factors at play, thus demonstrating the need for the psychiatric viewpoint in social work of all kinds. By the modern technique referred to above, I mean a thorough study of the individual from a psychological, psychiatric, sociological and physical standpoint, at the hands of well trained specialists in these lines, and a cooperative form of treatment instituted with careful and persistent follow-up.

XV

Clinic at the hospital demonstrating the commoner types of psychoses, with a free discussion of the psychological elements, the environmental factors, and the developmental defects of the personality, which apparently are responsible for the psychoses.

Besides the clinic, a tour of the hospital is made, with the idea of familiarizing the student with the more humane and scientific methods now utilized in the care of the insane, and also to emphasize the sociological importance of the mental hygiene problem.

A demonstration of pathological material is also given, in order to crystalize in the minds of the student, the manner in which abnormal organic states influence behavior.

XVI

Review and oral quiz, covering material of the second semester, with free discussion of the material covering all of the last seven lectures.

As has been indicated before this course was designed for teachers, social workers, parents, and college students, so that it was quite comprehensive, but it may be adopted, by modification, for

almost any group, and the material of some of the individual lectures can be utilized to good advantage in popular lectures to service clubs, parent-teacher associations, etc.

The writer realizes that there is nothing new nor original in the material here presented, but it is an effort to put into brief yet sufficiently comprehensive form some of the voluminous literature on the subject which has arisen recently, and to formulate it in such a way that it may serve as a text for a didactic course of lectures on mental hygiene.

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SOME MODERN CONCEPTIONS IN PSYCHIATRIC PRACTICE

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In preparing a paper to read before an audience composed of laymen, laywomen and physicians comprising this conference, it is essential to frame one's language so that it will be understandable to the diverse listeners. The writer has endeavored to meet the situation by using, as far as possible, simple understandable English, and avoiding technical terms. Psychiatry is replete with expressions understandable only to the initiated. This has been one of its drawbacks in presenting psychiatric topics to laymen and also to physicians unacquainted with the vocabulary of this specialty. The writer trusts that he has met the situation in the following paper:

Man is what he is by reason of his ancestry, his mental and physical equipment, the education and training he receives, and the effects of environmental influences. All men are not created mentally or physically equal. The ideal man would be one equipped with the highest degree of mental and physical perfection; there are but few such individuals. Some men have a splendid physique, but are lacking in mental capacity, e. g., many savages. Others are highly endowed mentally, but their physical equipment may be meagre.

Man varies greatly in his ability to learn. When this capacity to acquire knowledge is below the normal average, we term it mental defect. Tests are now available to measure the intelligence or learning capacity of individuals. The native capacity of man to acquire knowledge is fixed at birth, unless affected later by disease processes. This fact has only been recognized in recent years, so that we now have in our schools special classes for mentally retarded children. However, poor progress at school does not always mean mental defect; it may be due to emotional maladjustment based on personal and environmental factors, or physical disease of various kinds.

Not only does man vary in his intelligence and physique, but also in emotional control. The various degrees of mental stability or instability, seen in individuals is, first, probably, due to the character of the central nervous system with which he is endowed, and

second, it is conditioned by training, education and environment and disease. One sees children, who, from birth, are active physically and mentally. One also observes children who are sluggish physically, and whose thought processes operate slowly. The latter, however, may possess normal intelligence or even intelligence above the average.

In addition to the pattern of the central nervous system laid down at birth, the glands of internal secretion (endocrine glands) also play their part. It is not within the scope of this paper to enumerate all the physical or psychological types, or the relation between physical types and mental disease, I merely wish to call attention to the fact that children and adults vary in temperament, mental capacity and physique. For those who wish to pursue the matter further, an abundant literature is available.

The education and training which we receive is for the purpose of preparing us for future emancipation from the home which shelters us, from the parents who feed, clothe and educate us in order that we may establish ourselves as self-supporting, independent units in the community, marry and reproduce our species. This is the larger biological view of the situation, though many, for one reason or another, do not make this biological progress.

The fundamental test which all individuals must meet, in order that a feeling of security and happiness may result, is the degree of adaptation which one makes to his environment and the manner in which he handles his own personal conflicts. Society, and by this I mean our environment, lays certain restrictions and taboos upon our instinctive wishes and strivings. According to whether we handle these instinctive desires to our personal satisfaction and in a manner acceptable to the social body as a whole, we preserve or do not preserve our mental health.

Th psychologists of late years have paid considerable attention to the study of our instinctive reactions and have classified them at length. For our purpose we will mention only three, i. e., the ego, or self-regarding instinct, the self-preservative or nutritional instinct, and the reproductive instinct. Space will not permit me to dilate upon the newer psychological conceptions with respect to these three important instinctive reactions. I will remark, however, that it is our inability to solve the conflicts between these three

instinctive tendencies and squaring them with reality or society, that brings about the greater number of the minor and major mental disorders.

Recent studies among adults, adolescents and children displaying deviations from normal behavior, emphasize the importance of the child's environment, particularly the type of home, of the parents or their substitutes, the influence of companions, teachers and the church in developing in the child proper habits of behavior and correct methods of thinking; the inculcation of good morals, ethics, and the formation of character. The late Dr. Thomas W. Salmon remarked: "What is needed is a parentorium for the training of parents", and this is without doubt the truth, although there are none so touchy as parents when criticized for the method which they use in bringing up their children. The case histories of psychiatric clinics throughout the country are replete with data concerning the well-meant but pernicious home influences which have created obstacles which the child cannot, or has difficulty in overcoming in his efforts at emancipating himself from the home in his progress along the biological pathways of life.

The conflicts between his instinctive desires and parental and environmental influences are those which every individual must solve in order that mental health may be preserved, happiness result and economic independence may take place. The inhibiting influence of an abnormal, although common, mother's selfish and smothering love, is well illustrated by Mrs. Burnett's story of "Little Lord Fauntleroy". There the mother de-sexed the boy in order to make him over into a girl. It is interesting and instructive to observe the average normal boy's revolt against such influences, and the scorn which he exhibits toward other boys who display "sissy" tendencies.

Out of all recent studies concerning the influences which mold the character of the child and form the pattern reactions which he is apt to follow later in life, is the fact that these are laid down much earlier than was formerly supposed. It is therefore incumbent that a knowledge of the newer principles of mental hygiene concerning the child and youth should be in the possession of parents, teachers, clergymen, physicians, and all others who come in contact with the child during his formative period in order that healthy pathways of thinking and acting may be attained. Mental

hygiene at the present time has more extensive ramifications, but it is not within the purview of this paper to discuss them.

The most important advance in the study of patients in mental hospitals has been in the direction of determining the mental forces at work which have brought about the manifold pictures of disordered human behavior which we term "insanity". Hitherto we have viewed the kaleidoscopic utterances and behavior of the patients on our wards and noted them down in our case histories.

Mental disorders are not inherited in the sense that we derive from our ancestors such things as delusions, hallucinations or disordered conduct. Roughly, mental disorders may be divided into two large groups: Organic and toxic mental conditions and functional mental disorders. In organic mental conditions there may be present a permanent destruction of nerve cells and tissues, as in the case of paresis which is due to syphilis. In the toxic disorders, there may be a temporary or a permanent interference with the function of the nerve cells and tissues of the brain; an example of the latter is seen in chronic alcoholic poisoning, causing the Korsakoff or polyneuritic alcoholic psychosis; an example of the former in delirious states caused by infections due to the pneumococcus, typhoid bacillus, or in infections following childbirth.

The functional psychoses are not as a rule accompanied by organic brain changes; here there is a distortion of normal mental operations. Every individual has his own breaking point. This is largely determined by the make-up or personality of the individual. Some individuals handle life's situations in a satisfactory fashion; others, possessing a more sensitive mental organization, may have difficulty, or actually break down, when confronted with similar problems.

Under the stresses of life people become inefficient in various ways. The probabilities are that these disorders represent various ways in which individuals of special degrees and types of sensitiveness react to special situations. These situations may appear very ordinary to the average person, but which may, for an individual of vulnerable or especially sensitive constitution, made more sensitive through special experience, be very difficult for them to meet. Therefore, when they are unable to meet life's situations as do normal persons, they break down.*

* C. Macfie Campbell, Boston Psychopathic Hospital Report, 1926.

In some instances the mental disorder may be found to be closely related to the special constitutional endowment and personality traits of individuals of a certain type, and to the life's experiences to which they have been subjected. The hyper-active, talkative person is apt to develop a psychosis in which there is a great flow of language and excessive motor activity. The morose, depressive individual is inclined to a mental disorder in which there is a slowing down of ideas, depression and motor retardation. The shy, introspective, day-dreaming, uncommunicative person, a mental disorder in which fantastic delusions and hallucinations, and withdrawal from reality, play a prominent part. There, however, may be an admixture of personality traits in the same individual, and this is usually reflected in the psychosis.

Through the work of the Vienna school of psychopathologists, and sympathetic workers in America, we now know that these abnormal reactions have a historical background and meaning and that certain precipitating factors enter into the situation. We further know that delusions, hallucinations, abnormal moods and bizarre behavior do not come out of a clear sky; that they are not due to demons, nor to supernatural agencies. We have discovered in many instances that they have their origin in defective early training and the abnormal methods which individuals take in solving their personal conflicts and the problems which arise in connection with their environment. We, moreover, know that the patient may be more or less aware of the mental factors operating in a given case, or he may be entirely unaware as to how it all came about.

This brings us to the contributions made by the newer school of psychopathology. This emphasizes the predominance of the unconscious mind over the conscious mind in our thinking and doing. The conscious mind may be described as that part of the operations of the brain which may be recalled by voluntary effort. The unconscious mind may be compared to a huge reservoir of thoughts and experiences which we have entirely forgotten, although still operating silently and without our conscious knowledge. Our unconscious wishes and desires may come to consciousness in the form of dreams, which may be simple in character as in the dreams of children, or as in the case of adults in more complicated symbolic and distorted forms, which, however, may be analyzed, in part at least,

by special technical procedures. The operation of the unconscious is readily seen in slips of the tongue, pen, symptomatic acts, conciously unexplained prejudices, likes and dislikes, and in major and minor mental disorders. These are not occasioned by chance, but are determined by definite psychological laws. There may also be mentioned the pre-conscious or fore-conscious, meaning those memories which may be brought to our recollection through conscious effort. All these divisions are merely conceptual and not anatomical or physiological. The newer psychology has enabled us to peer behind the veil of distorted human behavior, and thus understand the actions and speech of our patients with a new insight into the mental mechanisms at work.

The following history of a young girl, aged 24, worked up by Drs. Bellinger and Brew, illustrates very clearly the pernicious effects of improper parental training, and how phantasy can be carried so far as to cause mental disorganization. Practically all individuals indulge to a greater or lesser degree in day-dreaming or phantasy. Building castles in Spain, as it is sometimes termed, afford the normal individual a temporary relief from the trials and tribulations of every-day life. When, however, they supersede and transcend our critical faculties and judgment, they become pathological. Many of our patients realize in their disordered thinking and behavior conscious and unconscious wishes and desires which give them some degree of satisfaction. This is attained at the expense of losing contact with reality.

The patient was committed July 22, 1925, with a history of attempted suicide, and repeated assaults against her mother and abnormal behavior for several years. Analysis of the life history of the patient and of the family history, revealed the following facts:

An over-indulgent, irritable, but successful father who died three and one-half years before the patient's admission. Like many modern business men, he had lived beyond his means and left only a small estate at his death. An aggressive, unstable, society loving mother, whose only thought was social success. The patient was educated in a fashionable New York finishing school, patronized by girls of wealth and those who aspired to social distinction. After leaving school the patient entered society and traveled in Europe. In Switzerland she and her mother consorted with royalty who were sojourning there. Both the patient and her mother recount many incidents of this association with great gusto. A famous portrait painter painted a portrait of the patient, which was exhibited at one of the painter's exhibitions held in London. It is stated that the Prince of Wales visited the exhibition and admired the portrait of the patient.

On the death of her father, to whom the patient displayed a strong attachment, she became quite upset, was morose, irritable, stuporous-like, and threatened to jump out of the window if anyone came near her. Somewhat later she became enamored of a man twenty years her senior, who was very alcoholic. This man probably represented a father substitute. The affair was finally broken off by her mother, who wished the patient to make a more desirable match, not only on the patient's account, but also to insure the mother means of financial support.

Some time later the patient fell in love with a young stock broker, who enticed the patient into his apartment and when under the influence of alcohol, he took advantage of her because she would not marry him. At this she became depressed, talked a lot about the affair and was ill in bed several weeks. She then made the acquaintance of a young Spanish girl, Sarita, who was of questionable character and habits. Sarita, the patient claims, impersonated the patient in a compromising situation with the young stock broker in an effort to destroy the patient's love for him and secure him for herself. Whether the incident the patient describes was an actual occurrence or a phantasy, is difficult to decide.

At intervals the patient endeavored to earn her own living by working on the stage, in bookshops, by posing, etc., but was inefficient. Finally she developed the idea that the Prince of Wales was in love with her. She had heard he admired her portrait in London, and in addition she had sent him a Christmas card, which his secretary acknowledged very courteously. She claims she saw the Prince in this country when on a boat at one of the yacht clubs.

Despite the fact that her mother's income was greatly reduced, the patient hired a suite at the Ritz in New York, and acted as though she was possessed of wealth. When her mother moved to a more modest apartment, the patient became greatly exercised and scolded and threatened her mother for taking her to live in such surroundings. An episode of disordered behavior at the Plaza Hotel, New York, occasioned her removal to the Bellevue Psychopathic Ward, where she claimed she had been kidnapped by several men and had been given poison by a nurse in the hospital. On the mother's insistence she was discharged after a few days, and taken to the mother' country home in Delaware County, from which place she was committed here.

During her hospital residence she was very troublesome, displayed a haughty, superior attitude, kept to her room, would not associate with the other patients, was very antagonistic toward the nurses, whom she stated would not believe she was the bride of the Prince of Wales; resisted attempts to bathe her, was destructive, careless and untidy in her dress, allowed her hair to hang over her face, kept her eyes toward the floor, would not eat at times, saying too much food affected her complexion, which, by the way, was very bad. She expressed ideas of conspiracy and poisoning, feelings of influence and kidnaping; she named Sarita and several men as being the cause of a conspiracy to make her out insane, or in order to get her out of the way to prevent her marrying "Don", the young stock broker, whom she sometimes calls the Prince, and then again to prevent her marrying the Prince of Wales. This identifying one man as the loved one or husband,

and another time another man similarly, is not an uncommon practice in dementia præcox. Donald she also stated had many of her father's qualities. She, moreover, identified a patient on the ward as Sarita, whom she stated was here in disguise in order to effect injury upon her. Evidently this Sarita had considerable attraction for the patient despite her questionable character and her belief that Sarita tried to make her out a bad girl. The patient also asserted that one of the nurses was her cousin and was responsible for her being here.. Claimed the other patients laughed at and talked about her. Admitted hearing voices, but would not state what they were. Her mood was usually one of irritability, fault-finding, haughty and superior, interbroken by fits of temper and destructiveness. She wrote the physicians and the superintendent many letters extolling her loveliness and educational advantages, and demanding her release. These letters were written childish, as was also her conduct.

When her mother visited her she tried to argue the patient out of her delusions, with the result that many wordy battles took place. The mother continuously insisted that the patient be discharged claiming that she possessed ample means to take care of her. She was advised not to be too precipitate, but this advice was not taken, and she secured a lawyer who was advised to take the case into court; however, the attorney agreed to provide a bond guaranteeing that the patient would be cared for suitably. The bond was furnished and the patient was discharged November 6, 1926. The diagnosis was dementia præcox, paranoid type.

Many of our patients employ distorted methods of thinking in settling their conflicts. The mental mechanisms, in the light of the newer psychopathological work, are in some instances not difficult to understand. In other cases, owing to the inaccessibility of the patient or meager family and environmental history, one is obliged to interpret the dynamic mechanisms at work largely from experiences gleaned from similar psychotic pictures who respond more readily to examination, and also from the literature on the subject. The sad element in these cases is that the abnormal delusions and hallucinations have become so deeply and firmly incorporated into the fabric of the patient's thought processes, and are actually the patient's method of solving his difficulties, forming part and parcel of the personality, that they are not amenable to persuasion nor affected by reason or judgment.

In this psychosis the patient gains the ideal lover, the Prince Charming, and at the same time she is elevated to the highest pinnacle of her social ambition. The psychosis, therefore, represents a fulfilled wish and a regressive flight from reality, but at the cost of the disintegration of the personality. Her excessive attachment for her father, her ideal lover, has probably prevented her from

reaching a normal heterosexual goal. Her jealousy of her mother is shown in the repeated hostile attacks upon her. Her attempt at suicide represents an attempt to find a way out of her difficulties and to become reunited with her adored father. Her unwholesome training made her anything but fit to cope with the altered financial status of the family and adapt herself to the real problems of life which confronted her.

The counterpart of the psychotic picture is found in the day and night dreams of individuals. Most girls wish to marry the young, handsome and wealthy prince, or what she believes is his counterpart in actual life. The young man wishes for success, wealth and the beautiful maiden. The Cinderella myth presented in the history of the patient, is to be found in every race and clime. What young man has not phantasied that he has rescued and married the beauteous maiden in distress? Such myths represent the day dreams of the individual or of the race come true, hence their popularity and indestructibility. We see them in folk lore, legends, myths, drama, song, poetry, literature, and, now in that greatest of attractions for the public, the movies, where the mechanism of identification enters into the situation. In the movies we see in many presentations the dream of the individual realized, hence their popularity, for we rejoice with the virile hero, suffer with the distressed maiden, detest the villain, laugh at the comedian, and go home content with the fact that there has been projected upon the screen, in a realized manner, certain of our wishes and desires which it is not possible to attain in this cold gray world of reality.

THE REDUCTION AND ARTIFICIAL IMPACTION OF FRACTURES OF THE NECK OF THE FEMUR*

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About two years ago I read a paper at the Hudson River State Hospital on this subject and stated that I believed that it was a good procedure. At this time I had only five or six cases. Since then we have had here in all, over 100 cases of fracture of the hip.

Of course not all of these were fractures of the neck of the femur, some of them were fractures below the trochanter major, a few have been of the shaft of the bone, but most of them have been fractures of the surgical neck. We have not treated every one of them by any single method, although we have tried to artificially impact every fracture of the neck of the femur in cases where we thought we could produce an impaction. I have treated 84 cases in this manner. Most of our results have been good, in fact they have been excellent.

I am going to show you a case that we impacted and could not get union, and another one in which the result is bad; we did not get the thing to hold in the position that we placed it in before impaction, which will prove to you that the results are not always what you expect them to be. I do not hesitate to show you these two cases in which we failed for the reason that one of them is walking after a nailing operation, and the other one will probably need to be confined to bed for the reason that she has such deformed feet that I do not believe she could walk very much anyhow, and besides that she has a separation of the recti-muscles of the abdomen to such a degree that there is an enormous hernia which should be repaired by the Gallie method.

The treatment of artificial impaction was brought out by Dr. Frederick Cotton of the Boston City Hospital, I think in 1915. I know Dr. Cotton, saw him work on some of these fractures, and saw some of the results that he obtained and it struck me that it was a good proceeding.

Those who have looked into end-results know that in these intracapsular fractures, that those that chance to have a solid impaction of fragments do rather well (given adequate after-care) and that those in which impaction is absent, or gives way, rarely attain bony union.

* Presented at Quarterly Conference at Binghamton State Hospital, June 20, 1928.

Case No. 181
The Fracture

Case No. 181
The Reduction

Case No. 181
After Impaction and Plaster Cast Applied

Case No. 181
Final Result

My effort has been to furnish to those patients lacking impaction, the fixation by impaction, accidentally present in many cases. This can be done with reasonable certainty. It has been done in many cases and bony union beyond question has been shown by the X-ray many months later.

All that is claimed for this method is that it produces an impaction as good as the one that comes on by accident, and that prior to producing this impaction, a very excellent reduction of the fracture may be brought about, and this favorable position maintained through and after the impaction. I think the method well worth while, particularly as it seems to have no danger or drawbacks.

The method is applicable to so-called loose fractures unreduced, especially after slight delay in initial treatment. Obviously it is not to be used in long non-union cases. It has been used successfully ten weeks after the accident. I have not been called upon to try to impact a fracture as old as ten weeks but we have been obliged to re-impact a few that have gotten out of place for one reason or another in my series.

Cotton has extended successfully the application of artificial impaction to a few cases, seven weeks and ten weeks after injury, thus demonstrating by the results that the reparative process may be at times, but not always, stimulated by artificial impaction at these late dates.

The Proceeding

1. The patient is placed on a fracture table. An X-ray plate is made and developed at once to show the position of the fragments. This is the method that we employ in the Hudson River State Hospital. The hip is too heavy for us to get a definite idea by the fluroscope. After the position of the fragments has been obtained, traction and other manipulation is made upon the injured limb until the length of the two limbs is essentially the same. The limb is rotated inward, the foot and toes being inverted.

2. Now another film is taken to be sure that the fracture is properly reduced and if it is, a pad of several folded towels is placed over the great trochanter of the injured femur. The sound side of the pelvis is forcibly held braced by an assistant.

3. The surgeon strikes a heavy following blow with a maul or heavy wooden mallet on the padded trochanter; this blow is

repeated if necessary. Dr. Cotton says that the surgeon should feel something yield beyond the mallet. I do not know that I have ever experienced this feeling, but what I do do is this: After I have placed this bone in proper position I pound it with a mallet until it stays there of its own accord, and after this occurs it will be found that the leg no longer rolls loosely into a position of eversion, but remains secure. The appearances become those of an impacted fracture of the neck of the femur.

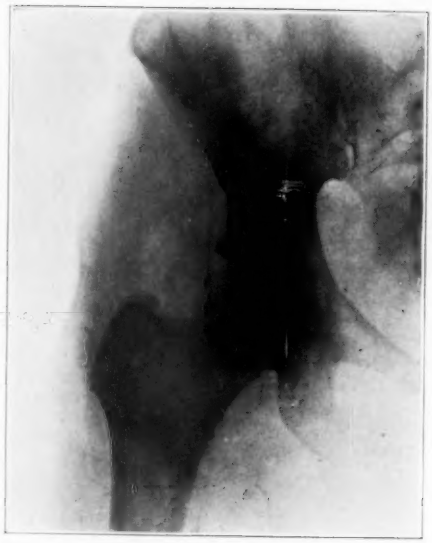
4. The surgeon then has to deal with an impacted fracture of the hip. A plaster spica is applied to the lower extremity with the limb in abduction and internal rotation, sometimes a double plaster spica is applied including, however, only the thigh of the uninjured side.

Abduction prevents adductor contracture often troublesome in the period of re-establishment of function. It neutralizes the tendency to coxa vara from muscle pull and is a more convenient position for the bed-care of the patient. (Cotton.)

5. We keep our patients in a spica cast here from 6 to 8 weeks provided they are cleanly patients. This produces absolute immobilization. From then on we do not use any other splint but we have our nurses, and they have become very adept and clever in managing these patients, teach these patients to walk a little by pushing a chair before them, what we call protected weight bearing. We have found that most of our patients start off to walk by themselves and the rest of the treatment remains in getting their strengh and losing their limp, if possible.

Now I shall show you the X-ray films in these cases so far as we have been able to find them again and also show you these patients walking in a moving picture. After all the result to be hoped for in all fractures of the hip is that you may so far restore function as to allow your patient to walk again. I think it was Abraham Lincoln who once said that all that was required of a leg anyhow was to have it long enough to reach from the body to the ground and be able to walk on it. The fact that these patients are now walking is practically the demonstration of the end-results of these cases. Equally good results might have been obtained by the treatment of the fractures by any other method except in some of these very old people. In these cases I believe that although the femur is a shock bone, yet one may safely impact it as I have done and that the

Case No. 203
The Fracture



Case No. 203
The Reduction

Case No. 203
After Artificial Impaction

Case No. 203
Final Result

chances for them to get a good result by this method is better than by any other.*

We have had much trouble with patients destroying their casts by picking them apart and the boards and iron strips have taken care of that. The other cases that have been troublesome are the unclean patients.

In the A. M. A. Journal of April 16, 1927, there is a description of a sawdust bed, and the article being a short one, I will read it.

SAWDUST BEDS FOR THE HELPLESS UNTIDY INSANE

"Dr. F. G. LaRue, superintendent for the Eastern State Hospital at Lexington, Ky., noticed in the quarterly report for July of the Department of Public Welfare of Illinois a short description of sawdust beds, in use in a hospital in Bauch, Germany, for the helpless, untidy insane. This class of patients is the most troublesome of all in any hospital and any provision that adds to their comfort and makes their care easier is worth installing.

"He at once had them installed in the Eastern State Hospital for this class of patients, and the results have been so satisfactory after more than a year's trial that I feel that all hospitals should know of them. So far as I know, this is the only hospital in this country using them.

"At present, there are thirty-four of these beds in use, and every one in charge, including the attendants, is highly pleased with the results. The beds are oblong boxes, made of 1-inch dressed boards; 6½ feet long, 30 inches wide and 18 inches deep, standing on legs 12 inches high and painted white.

"They are filled with fresh sawdust within 6 inches of the top, the sawdust having been first passed through a one-fourth-inch sieve. The sawdust should not be too fine on account of packing, and may be renewed as a whole at any time with but little trouble, if necessary. Rollers may be put on these beds as on any other bed. Friends and relatives of patients have never made any complaint about their use.

*EDITOR'S NOTE: Dr. Andrews showed on the screen several series of X-ray films of cases of hip fracture treated at the Hudson River State Hospital. In each series the first picture showed the fracture, the second picture the reduction, the third picture the fracture impacted and the fourth picture the final result. Two series of these pictures are presented herewith.

In explaining the pictures Dr. Andrews gave a brief history of each case and discussed the special difficulties met with in certain cases.

Following the lantern slides, a motion picture was shown to demonstrate the results obtained. In most cases the patients treated walked freely, many of them without any apparent lameness.

"The patient, clothed in a short night shirt, lies directly on the sawdust, which readily conforms to the shape of the body, but does not in any way interfere with whatever movements of the body or limbs he may be able to make. A pillow is placed under the head and the patient is covered with sheet and blankets, according to the temperature of the room.

"The excreta from the bowels and kidneys with the small amount of sawdust thereby soiled is scooped out immediately with an ordinary 6-inch scoop and destroyed. Fresh sawdust is added from time to time to keep the total amount up to the 12-inch level; it is stirred to the bottom several times a week to prevent its packing too hard, and the top is easily kept level by means of a scoop or the hand. The beds are cared for by fairly intelligent patients under the supervision of an attendant.

"The advantages of these beds are as follows: They are sanitary, and neat and clean in appearance; all odor is eliminated; bed sores do not develop and readily heal when patients with them, even far advanced paralytics, are placed in the beds. They can be quickly made by a carpenter and the original cost and cost of maintenance is small. Restraint is not needed to keep the patients from falling out of bed as they often did, when bruises and sometimes broken bones resulted, regardless of care and attention.

"The saving in laundry is quite an item in hospitals and a helpless, untidy patient will soil from twelve to eighteen sheets every twenty-four hours. By the use of these beds, the number of sheets is reduced to not more than three a day, and seldom this many. Night shirts are seldom soiled, and the patient is never wet from the discharges from the body, as the sawdust absorbs all moisture at once. It is surprising what a small amount is dampened by a free evacuation of the bladder."

The last picture* I show you is one of these sawdust beds and I think I can say that they are a success. We have two in operation at this writing and both are used for patients who wet and soil. In addition to the advantages claimed for these beds in the article I can add that they save our plaster casts. Both of these patients have fractured femurs and their casts are in good condition; a check-up shows that the fractures are in good position and the patients comfortable.

* See accompanying cut.

THE SAWDUST BED

COMPARISON OF BEDS

Regular Ward Bed	Sawdust Bed
Patient's elevation for convenience of attendance	Same
Springs, mattress, rubber sheet, white sheet beneath body	Has one foot of sifted sawdust throughout and white sheet under upper portion of body
Soft pillows for head and shoulders	Same
Patient must be rolled or moved in such a manner to remove soiled linen, body washed, fresh linen replaced	Very little movement of patient to remove soiled sawdust and replacement
Much disturbance of patients Much disturbance of injured member Much destruction of plaster cast	Very little disturbance of patient Very little disturbance of fracture Very little destruction of cast
As water finds its level, urine will run under patient and to the cast, leading to destruction of cast and possible bed sores	Sawdust will absorb moisture as voided. Does not reach cast and undoubtedly reduces possibility of sores. Cast solid
Comfort to the sanitary? Good.	Fair
Comfort to the unsanitary? Bad. (The total comfort during fracture illness must be considered. In this bed using springs, mattresses, rubber sheeting and linen, this comfort is over-balanced by odor, pain in much handling, sores, anaethetics, re-casting, prolonged healing, etc.)	Comfort to the unsanitary? Good. (The total comfort here is better; less possibility of sores; no odor; lesser pain in handling; one anesthesia; one cast; no possibility of falling from bed)
For the caretaker it requires lots of attention; much handling; disagreeable smell from foul casts; unclean condition of patient's body; bed sore attention; much soiled linen; much handling. etc.	For the caretaker the condition is better; no soiled linen, sores; heavy lifting; etc.
This bed is bad from a clinical standpoint. Means greater amount of medical attention, with possible poorer ultimate results.	The sawdust bed is the only solution so far to the best and speedy recovery of the injured
The total cost in materials, washing, medicine, bandages, plaster, etc., is great in care of the unsanitary in the ward bed.	In this bed it is reduced to a minimum

BOOK REVIEWS

Manual of Bacteriology and Pathology for Nurses. By JAY G. ROBERTS, Ph. G., M. D., Pomona, Cal. Fifth Edition. 12mo. of 235 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1928. Cloth, $2.00 net.

In order to efficiently practice her profession it is necessary that the nurse should know the theories and principles of bacteriology and pathology, and also have an understanding of the application of these to her work.

Dr. Roberts has given us a book which, while completely covering these matters, is also brief and to the point. Unnecessary detail which would only serve to make the subject matter more difficult of comprehension, has been avoided, yet no essential information is omitted.

In this new edition of his book Dr. Roberts demonstrates that he is keeping his work abreast of the times. Procedures, methods and materials given in former editions, that are no longer considered satisfactory, are omitted and the latest advances along various lines are carefully described. In the chapter devoted to susceptibility and infection, greater detail is given, necessitating the addition of several pages on these subjects.

Serum therapy and serum diagnosis also receive additional space and careful handling by the author, the most recent discoveries and developments, such as the Dick test and the Kahn test, being outlined.

The former editions have been found exceedingly helpful to nurses in training and have also served well as reference books for graduates, and this new and up-to-date fifth edition is a worthy successor to its predecessors.

PRITCHARD.

Delusions and Relief. By C. MACFIE CAMPBELL, M. D., Professor of Psychiatry in Harvard Medical School. Printed by the Harvard University Press.

This is a small book divided into thirteen chapters.

The quality of human life is the goal stressed in these chapters. The term, "health", is seen to include sanity of beliefs as well as soundness of body. It is through the simpler mechanism that man adds to the span of life but through the more complex mechanisms that he adds to its quality, and gives to life its specific value. The beliefs that add to the happiness of life may have much to do with its prolongation.

Delusion is not a strange and mysterious element. It is an attempt of the personality to deal with special difficulties, in which attempt the mind not infrequently reverts to primitive modes of adaptation, which are at variance with the actual level of thought of the period and group in which the individual finds himself. Delusion, like fever, should be looked upon as nature's attempt to cure.

The author discusses modes of dealing with important issues in life, which are charged with high emotional value, such as bereavement, unsatisfied love, the longing of the childless and the desire for power. It is emphasized that it is not surprising that in dealing with such personal matters, the individual exerts a powerful influence and that the attitudes and beliefs of the individual in regard to these matters should have a strongly subjective note. Specific instances are referred to in which persons who meet issues of this kind resort to beliefs which seem abnormal.

It is not only in regard to matters charged with high emotional value that personal factors enter but they even enter into scientific convictions. Carlisle's reaction to Darwin's theory of evolution is cited as an example. What to Darwin seemed a mere biological truth—to Carlisle was a mortal challenge threatening to rob him of that which he clung to with the greatest pertinacity. Personal factors also enter into more simple perceptions. Nature is interpreted by the poet in a different way from that which is experienced by the naturalist. The daffodils of Wadsworth laughing and dancing in the breeze are seen by him to form a jocund company because he is in a gay mood. However, the naturalist who classifies them sees them in a different setting. The extraordinarily dissimilar experience of the lover, the poet, the divine and the stock broker, face to face with the simple phenomena of nature shows us that the human mind is no mere registering machine, no photographic camera, the simple perceptions as well as the complex beliefs of the individual are both impregnated with the total personality.

The next chapter takes up the subject of the individual and social importance of beliefs. Health has a positive as well as a negative aspect. It means more than freedom from recognized disease. The mental or spiritual functions are as much apart of the endowment of man as are the simple bodily functions.

The diversity of beliefs is very marked and this depends upon such factors as different levels of culture and the accidents of historical development, race and environmental factors, and in the individual upon special temperament, special experiences and special emotional needs. Progress is to be obtained by spreading information and cultivating better habits of thought. One does not wish to rob souls in trouble of their comforting

beliefs but one may strive to put at their disposal beliefs more in keeping with the culture of their period and environment than the formulae of primitive man. Beliefs as regards health may be of a dangerous character as well as helpful. It can not be looked upon as healthful to find personal comfort by seeing the world in the light of our desire and saying that something is not when it is. Wishful thinking, however, is by no means rare even in academic circles.

This is an exceedingly interesting and well-written book and should be of value to lay and medical students, as well as psychiatrists.

GROVER.

Mongolism. By KATE BROUSSEAU and H. G. BRAINERD, M. D. Price $4.50. Williams and Wilkins Co., Baltimore.

The authors of this book are to be commended for bringing together in an unusually readable form what is known, what is believed, and what is unknown concerning Mongolism. The viewpoints of various observers as well as their own interpretations are presented and discussed. The text is well illustrated with unusually good photographs and several statistical tables and graphs. One of the greatest values of this book lies in its ample bibliography. Much of the data is viewed through statistical lenses but presented in non-technical fashion. The statistics lack "scientific treatment," hence they are intelligible to those readers not possessed of a Euclidian mind. This book can be recommended as a manual of physical and mental characteristics of Mongolism. The reviewer cannot endorse, however, in all instances, the interpretation the authors place upon the presented data.

The book contains 210 pages, 35 of which are given over to an appendix (containing a dozen case reports), a bibliography, and the index. There are seven chapters inclusive of the introduction.

CHAPTER I—INTRODUCTION

Mongolism is defined as "a stage of congenital mental deficiency whose marked physical characteristics are certain resemblances to the Mongol race . . . It consists in a peculiar combination of defects rather than in distinctive anomalies."

Several pages are devoted to outlining the history of observations and development of interest and causative theoroies by different observers in various countries.

"At first it was believed to be confined to the white race and non-existent among Jews." From later reports and wider interest in this entity "it is probable that Mongolism exists everywhere and among all races."

Its frequency is almost impossible to estimate with any degree of accuracy on account of early deaths, the large number of uninstitutionalized cases, etc. Estimates run from 1 to 22 per cent of Mongols among all feeble-minded; 5 to 10 per cent seem too be the predominating estimates.

There is apparently no significant difference in distribution relative to sex.

Chapter II—Etiology: Various Theories

Various possible causes and theories as to pathogenesis are outlined. Statistics on these possible factors are presented with the idea of evaluating their worth. Reading between the lines, as it were, and forgetting actual figures, the reviewer is much impressed with the idea that the pathogenesis rests in some sort of a disturbance which tends to devitalize the germ cells and destroy their potentiality for ultimate complete development of the fetus. This assumed disturbance is by no means of a permanent nature and does not of necessity always give rise to Mongolism any more than syphilis of necessity always gives rise to general paresis. The authors' summary of this chapter is given herewith:

1. Mongolian imbecility cannot be a reversion to a primitive Mongol type since the resemblance to the Chinese or Japanese race is mainly superficial and since, furthermore, the condition is a pathological one.

2. Mongolian imbecility is not due to parental alcoholism, tuberculosis, or syphilis although these conditions may in many cases be powerful contributory agents.

3. Mongolian imbecility is not due to neuropathic heredity. Careful investigation of cases shows that the family history is generally good and we find that the brothers and sisters of Mongols are, with very few exceptions, mentally and physically normal.

4. Mongolian imbecility is not due to extremes of age in one or both parents. The advanced age of the mother may be a potent contributory cause but it is not alone sufficient to explain the condition; we find many Mongols born to mothers who are under 35 years of age.

5. Mongolian imbecility bears no relation to the order of birth or to the number of children in the family. An examination of 800 cases shows that 57.49 per cent of the Mongols belong to families where the Mongol was the first, second or third child.

6. Mongolian imbecility is not due to mental strain. Many mothers report that the pregnancy resulting in the birth of a Mongol was calm, uneventful and altogether free from anxiety, furthermore, statistics show that Mongolism did not increase in the warring countries during the World War although pregnant women were subjected as never before to continued terror and anxiety.

7. Mongolian imbecility has not for its essential cause some disease of the maternal reproductive organs or undernourishment or overwork of the mother during pregnancy. If such were the cause it would be difficult to explain the condition of Mongolism in one of twins. (There is recorded 37 cases of Mongolism in twins. In 32 instances one twin was a Mongolian and the other was a normal child. In 5 cases both twins were Mongolians. It seems that when both twins were Mongols they are monozygotic while in the event that only one of the twins were Mongols, they were dizygotic.)

8. Mongolian imbecility is possibly induced by some obscure disturbance of the ductless glands. There may be inherited or congenital glandular instability or the mother during pregnancy may develop certain endocrine disorders which may be transmitted to the child. Further investigation may show that Mongolism is the result of a pluriglandular syndrome or the dysfunction of some particular gland. Some endocrine disturbance can be demonstrated in every Mongol.

Chapter III—Pathology and Physical Characteristics

Shuttleworth's appellation "unfinished children" is particularly apt. The entire physical and anatomical make-up consists of an aggregation of genetic anomalies rather pathological entities. "The brain is generally smaller than normal and much simplified. There is a noticeable diminution in the size of the pons, medulla, and cerebellum. Microscopically there are no marked lesions. The hemispheres are frequently asymetrical. The convolutions are coarse, flattened, and poorly outlined and the cortex thinner than normal. . . . There is found a rarefication of cells in the cerebral cortex and those that remain have few cell prolongations." At the end of the chapter is a list of the most common physical findings which are herewith appended—"narrow and oblique palpebral fissures, strabismus,myopia, epicanthus, cataract, blepharitis, ectropion, chronic conjunctivitis, malformed ears, micro-brachycephalic head, asymmetry of skull, ridged palate, abnormally high palate, prognathism, dorso-lumbar kyphosis, genitalia underdeveloped, umbilical hernia, incurved little finger, thumbs and little fingers very short, toes widely separated, fissured tongue with hypertrophied papillae, protruding tongue, congenital cardiac defects."

Chapter IV—Nervous and Mental Characteristics

Mongolians are very definitely delayed in teething, sitting, walking, talking and other similar activities depending upon mental and physical development. The authors were able to collect data concerning the mental ages and intelligence quotients on 206 cases of Mongolism. They state "we find that mentally these children are very much retarded but the degree of defi-

ciency varies greatly; occasionally a Mongol child reaches the mental age of 6 or 7 years, on the other hand many Mongols belong to the idiot group while the majority of these children are in the low grade imbecile class."

In relation to general mental characteristics the authors state that "there are certain traits that appear to be common to all Mongols, these children are, with few exceptions, placid, affectionate, and good humored. Practically all are fond of music and rhythmic movements."

Chapter V—Diagnosis

This chapter is devoted to the differential diagnosis of cretinism, achondroplasia, and rickets from Mongolism. The material is well presented and is of value to the non-medical observer. There seems to be no valid reason for any well trained medical clinician to confuse any of these entities with Mongolism.

Chapter VI—Prognosis

The authors think that a good many Mongols die at birth or during the first few weeks of life without being recognized. Many die in infancy from what appears to be merely a slow ebbing of their vitality until a point is reached when they just fail to carry on. In a series of 95 Mongol deaths collected by the authors 40 per cent died before the age of 5 years. The authors place the average age at death as 14 years. Mongols are especially susceptible to respiratory diseases and gastro-intestinal disturbances.

The authors state that mentally, the Mongol is essentially unimprovable. "Neither treatment nor training will bring about any considerable improvement in the physical or mental condition." They state that Shuttleworth believes that fairly satisfactory results may be reached in the training of the higher grades of Mongols. In fact Shuttleworth is quoted as follows, "Indeed we know youths of the mildly Mongol type, who, after appropriate education pass muster with their brothers and sisters." The reviewer would like to state that he is personally acquainted with a teacher who worked for several years in a private school in England, training Mongols. This teacher has related case after case which forces the reviewer to take the above statement of Shuttlworth at its face value. The reviewer is also acquainted with some remarkable improvements obtained by Timme through endocrine therapy.

Chapter VII—Therapy, Education, Training

The authors seem to think that the only medical attention which is called for ("until more is known of etiology") is to take care of surgically remedial defects and medical conditions as they arise. They stress the impor-

tance of general hygiene measures such as are indicated by the physical condition. They state that little or nothing is to be gained by teaching the three R's or from manual training. Sense training and pre-kindergarten methods are stressed. Reference is made to Tredgold's suggestion that a definite improvement under combined glandular medication has occurred in certain instances.

The reviewer again wants to emphasize the importance of leaving nothing undone in the individual case—endocrine therapy, teaching the 3 R's, and even manual training. The reviewer personally knows of many Mongols who sew and use their hands with such skill that they make Oriental rugs, knit, make lace, etc. The reviewer cannot agree that medical treatment of Mongolism or any other condition must wait until much is known of etiology; in fact the history of medicine proves just the reverse. There is nothing about Mongolism to set it apart, in this respect, from many other clinical entities.

POTTER.

Folklore of the Teeth. By LEO KANNER. The Macmillan Company, New York. Price, $4.00.

Dr. Kanner, a staff physician of the South Dakota State Hospital, presents, in this volume of 297 pages, data of certain interest to psychiatrists, to antiquaries, and to all collectors of bizarre and unique literature. His work has obviously been prepared *con amore* for he has apparently delved into all available sources of knowledge, ancient and modern, pertaining to human dentition. His bibliography covers 12 pages.

Dr. Kanner states that in the collection of his material he has given all his leisure time for some years to visiting museums, searching literature, interviewing everyone who could offer him possible suggestions of interest or value.

Dental surgery is known even to some of the most primitive peoples in the form of extraction and that of cauterization. Artificial teeth and complete dentures are not very common but were known to the ancient Egyptians, Etruscans, Hebrews, Grecians and Romans, to the medieval Arabs and Hindus and to the Eskimos, Tibetans and Dyaks of today. The author gives nine chapters of his book to various surgical and non-surgical methods of popular dental therapeutics.

The belief was entertained in many countries that toothache was caused by a minute worm. Even though most enlightened people had abandoned this belief at the beginning of the 18th century it still exists in India, Arabia and China. In the latter country "dentists" wander about with chests filled with medicines. The patient is given medicine to apply to his face then he

has to cough and this would make the worm fall out. The most common popular remedy against "worms in the teeth" was fumigation with henbane.

Many oddities concerning the use of tooth brushes and tooth picks in the cleansing of teeth are to be found in Dr. Kanner's book. For example, Mohammedans, who eat no pork, are horrified at the use of the tooth brushes containing hog bristles.

The author in different portions of his work describes the strange customs of aboriginal and semi-civilized peoples and tribes as to the care of teeth and also to the mutilation of teeth; the filing by some to sharp points and by others the notching of teeth, still others by forcible removal of a portion of the front teeth—all with a view to supposed improvement in their facial appearance. Gold and mother-of-pearl are also used, in most cases as a testimony of opulence. As many of these people blacken the teeth, these valuable additions may have relieved the monotony of color to some extent. Several Hindu tribes dye their teeth red and this color is preferred—in the African continent especially.

Dr. Kanner gives space to a description of the worship of the celebrated tooth of Buddha now in the temple of Kandy, India, esteemed with devotion by 450 millions of people. This popular object of worship underwent many vicissitudes, being removed from place to place in different centuries. It is mentioned by the Chinese traveler, Fu-hian, who saw it in the year 405.

In a Roman martyrology containing 13,825 names, that of Saint Apollonia appears as the protector and intercessor of sufferers from toothache. Her history is given by Dionysius, Bishop of Antioch. She had renounced the worship of the Roman gods and embraced Christianity. She was captured by the Romans, imprisoned, her teeth were taken out and her jaws were crushed. Finally a pyre was prepared and Apollonia was given the alternative of renouncing Christianity or of perishing in the flames. For answer, she leaped into the fire and died a martyr's death. In succeeding centuries several variants of this account found favor in different parts of the world; also many artists, at different periods, exhibited paintings representing the Saint in many divergent poses, but most of them giving in graphic detail the forcible—not to say brutal—extraction of her teeth. Included in this chapter also were various Latin, German and French prayers and poems, dedicated to the Saint.

Lack of space prevent further presentation of proof that Dr. Kanner's book is not in any respect hackneyed and readers who begin Folklore are fairly certain to finish it.

McGarr.

Epilepsy, Comparative Pathogenesis, Symptoms, Treatment. By L. J. J. MUSKENS, M. D., Amsterdam. Published by Wm. Wood Company, New York.

In the foreword, Sherrington, the translator, refers to his acquaintance with Dr. Muskens' endeavors to promote neurological knowledge by combining experimental investigation with clinical observations and study.

The author states that the book is a report of his anatomo-physiological work over a period of 16 years and of his clinical investigation for 24 years, many cases having been followed up for that period.

The author calls attention to the diverse results of physiologists' and neurologists' investigations in the matter of epileptiform phenomena in animals and man. Efforts to produce "experimental epilepsy" have resulted in many important contributions to the nature of brain centers but not especially to ordinary epileptiform phenomena. Many years ago, attention was called to fits occurring in warm-blooded animals when bled. Muskens believes these belong more or less to the same class as those fits which occur where the animal has been deprived of oxygen or in the terminal stages of central nerve poisoning, differing from true epileptic convulsions in the lack of prodromal symptoms.

Muskens mentions stimulation of certain brain centers resulting in a fit, which is not really epileptic. It is only in the higher type of animal that the nervous system has attained the degree of development where an epileptic fit can be produced. There is increasing belief that epilepsy is due to some toxin. The narrowness of the dividing line between epilepsy and health is striking. There is parallelism between the epileptic fit and such phenomena as shivering in fever, sudden start, etc., seen in early childhood when at the point of sleep, or in adults when exposed to sudden noise.

The number of drugs which will produce fits is legion. The author mentions camphor monobromide and absinthe as best for producing experimental epileptic convulsions in animals. In man, poisoning from these drugs produces convulsions. One important property of many drugs associated with production of fits is that of heightening the reflex irritability.

Muskens believes that the epileptic convulsion is a protective process for the dissipation of toxic elements. There is in the daily cycle a period when there is special tendency for the development of myoclonic epileptiform phenomena. The fit is a detoxicating process. Each fit makes the individual more likely to have another.

The author mentions equivalents under the term "compensation", e. g., paroxysms of rage accompanied by vehement muscular action really substituting the fit, in other words compensating for one. The briefest seizure may be only dilatation of the pupils. The moment of awakening from sleep or

emerging from an anaesthetic are times when myoclonic fits are most likely to occur. The normal epileptic reaction described by Rosett corresponds with the phenomena Muskens describes as myoclonic reflex. The myoclonic epileptic fit is to be conceived of as a special complex reflex after-discharge depending upon certain associated conditions and important as a detoxicating agent. In incipient myoclonic epilepsy we deal with a physiological condition which leads to a pathological one. All sorts of abnormal muscular movements have been labeled as epilepsy.

It seems very likely there is no such thing as a center associated with fits. It is more probable that a fit is due to the interplay of various complex nerve nuclei, that it is an essential physiological process in an anatomical entity. Between the cortex and the medullary centers for the myoclonic reflexes there exists a certain relationship. The cortex exerts an influence over the medulla and the medulla over the cortex. It has been shown that the epileptic fit may occur after the removal of both cerebral hemispheres.

Muskens mentions that the pons and medulla have a special significance in the conservation of consciousness. He agrees with Russell Reynolds that myoclonic epilepsy is most common among the different types. The author believes, as do other writers, that chronic cases of epilepsy especially met with in institutions and State hospitals for the insane are end products to various pathological processes. Early cases are the most important socially in that there is hope of arresting progress. He mentions the acquiring of the epileptic habit, also that while there is a tendency to epileptic phenomena from hereditary predisposition they may also appear suddenly in healthy stock. He considers the incidence of epileptiform convulsions at onset of acute infectious as almost physiological. He stresses the occurrence of myoclonic shocks for years before a general convulsion appears, these often times not being properly evaluated. He does not accept Ramsay Hunt's static seizures. He mentions a myoclonic epileptic often having a seizure if awakened suddenly or exposed to a sudden noise, such as banging of a door, a condition similar to paroxysms occurring in pertussis. He refers to epistaxis as a possible equivalent of a seizure.

Epilepsy is not essentially psychological, but may have many psychological symptoms. Long intermissions may occur which cannot be satisfactorily accounted for. Muskens believes that epilepsy develops most frequently in the second decade of life, that it is extremely difficult to ascertain the actual start of the disorder, that the process is so slow and so subtle that it is generally well advanced when it is recognized, that in every individual there is a certain natural or in-born tendency toward the development of fits, and there are periods in the natural course of life when the tendency to develop fits is higher than others, e. g., infancy and puberty and, in women, menstrual

period and pregnancy. In very young children it is surprising how often one gets either acoustic or tactile myoclonic reflexes. There is lack of reliable history as to frequency of occurrence of single convulsions in healthy persons. Many quite intelligent persons fail to attach any importance to them, therefore it is difficult in many instances to obtain a history of the particular patient in this respect.

The author refers to eclampsia being much less frequent during the World War when there was a shortage of albuminous food. Epilepsy very rarely interrupts pregnancy whereas interruption is very common in eclampsia.

The fits throw toxins into circulation, and this accounts for the temporary post-epileptic disturbances and automatism. Whether the patient reacts to the toxin by a shivering fit or an epileptic convulsion, according to Richet, depends solely on the dose of the toxin.

The examination of secretions and excretions in regard to throwing light on epilepsy have been most disappointing. Possibly methods of chemical research may be developed, permitting of better degree of delicacy for estimating very fine grades of alteration.

Muskens refers to the great varieties and combinations of the minor symptoms apart from what he terms the three cardinal ones: the epileptic fit, the myoclonic shocks, and the headache. Prognosis is more favorable where the manifestation is a solitary fit than where there are complicated symptoms such as fainting spells.

He calls attention to the difficulty in obtaining satisfactory figures regarding the frequency of the disorder; as to what is epilepsy; can a person who has one or two seizures in a lifetime be called epileptic, etc.—all long recognized as very pertinent points. He writes at length regarding the difficulty of deciding as to whether specific cranial injury is associated with epileptic fits, more especially when there is no tangible sign of bone injury. In a series of 2,000 epileptics he found not one in whom he could diagnose reflex epilepsy as a separate entity. Although it is of utmost importance in order to prevent establishing a habit, he mentions the difficulty in making a diagnosis in early stages when symptoms of epilepsy are slight and elusive. Milder symptoms are often overlooked, as the average person expects an epileptic to have the severe convulsion, not recognizing other symptoms as epileptics. He calls attention to the difficulty in making a diagnosis when a patient is for the first time seen in a seizure. He writes at length regarding psychical equivalents, fugues, medico-legal aspects of epileptics, etc. He believes that some epileptics may ward off seizures by violent muscular exercise.

Epilepsy does not begin as a fully developed entity. There is great degree of variation as to the effect of recurring seizures on mentality. Some show marked mental deterioration after a few seizures, while others remain prac-

tically unaffected mentally after having epilepsy for many years. When mental deterioration occurs there is some unknown factor acting. It is not ethically possible to plead complete irresponsibility in the case of every epileptic appearing in criminal court. Mental deterioration may form a part of epilepsy in the same way that infectious processes and furunculosis may be symptoms in a case of diabetes.

The author calls attention to many epileptic children doing well at school. He believes there is too much stress laid on descriptions of the epileptic character, that while epileptics as a class tend to be more irritable, are dreamy, etc., it must be remembered that among epileptics, as normal people, there are great variations in temperament and natural characteristics. Some of the mental changes observed in epileptics are the result of life being made so difficult for such persons. Some of the so-called characteristics are really prodromal symptoms, of the seizures. In order to make a fair evaluation of the mentality of a particular epileptic, one must get him into a comparatively normal condition, i. e., the fits must be arrested for a couple of weeks.

Muskens states that epileptiform reactions due to organic disease, tumor, or traumata of the head or brain, do not come under the category of epilepsy as discussed. He refers to the marriage of epileptics and mentions that curiously and fortunately epileptics as a class seem to be lethargic sexually. A number of his patients have married and had children, and thus far not one of the offspring has become epileptic. (Somewhat similar observations have been made by the reviewer.) Because so many hopeless cases of epilepsy are brought to clinics, the public gets the impression that all are such. Epilepsy is no more hopeless than tuberculosis, much less so if it is treated at the early stages. In epilepsy we have to deal with the physiological principle that every process performed for the first time has to overcome a certain resistance. When the action is repeated often enough the resistance is gradually worn away. Where this resistance has been overcome for a long period, the nerve tracts involved may be described as "frayed". He compares the physical events seen, to a child being taught piano playing. At first the movements are difficult and the co-ordination awkward, but later done practically mechanically. In the same way, if the myoclonic shocks, are prevented the resistance is built up, as conversely the mechanical playing is lost if not kept up by practice. The great point to be realized about epilepsy is that it is the repetition of the fit which constitutes the great danger. As Gowers states "the disease is self-perpetuating."

The more one sees and studies epilepsy the more convinced one becomes that the idea that the epileptic fit comes as a bolt from the blue is wrong. The fit may be a surprise to the friends and relatives but that is because they lack the necessary training for observing symptoms. What actually precipi-

tates the fit may be a very slight matter, e. g., some slight injury, rise of temperature or gastro-intestinal disturbance. A very important point to remember is that although the fits may be arrested, the patient is essentially an epileptic. As Pierce Clark well points out, at least half the relapses could be prevented by proper after-care. In the treatment of traumatic epilepsy, Muskens calls attention to the fact that many surgeons do not consider sufficiently the important part played by bone splinters, adhesions, cysts, while too much is done in the way of providing some artificial covering to a defect in the skull, that sometimes seizures continue because of the latter. He calls attention to much in recent literature favoring the conception that epilepsy is due to chemical metabolic changes, that it is essentially reflex phenomena which as result of repetition have become pathological. From the time of Hippocrates there have always been some who taught and believed that epilepsy was a reversible process and therefore curable. In epilepsy we have an organism where normal reflexes have gone astray, and we have in such disorder merely to regulate.

In the closing chapter, the author refers to the International League against epilepsy, and the methods adopted for the care of epileptics, in State institutions as well as in their homes. The idea formerly advanced that segregation and isolation of epileptics would stamp out the disease is Utopian.

WM. T. SHANAHAN.

Schizophrenia (Dementia Praecox). An Investigation by the Association for Research in Nervous and Mental Diseases of the Most Recent Character. The Proceedings of the Assoociation; New York, December 28 and 29, 1925. Edited and published, April, 1928. Editorial Board: Charles L. Dana, M. D., Thomas K. Davis, M. D., Smith Ely Jelliffe, M. D., Henry Alsop Riley, M. D., Frederick Tilney, M. D., Walter Timme, M. D. With 61 illustrations. Paul B. Hober, Inc., New York.

This work represents the most recent research and advancement of knowledge relative to schizophrenia. It is of necessity very technical in character but indispensable to those psychiatrists who will be abreast of the development of their science, as well as for all physicians who are treating mental diseases.

The work consists of monographs of several investigators and contains 491 pages; in the nature of the case a review can hardly do more than exhibit the contents or themes treated.

SECTION 1, HISTORICAL SURVEY AND DELIMITATION

Dr. Adolf Meyer discusses the evolution of the dementia præcox concept, not however, with pretense to a complete historical account, but submitting

rather an outline of the concepts which are the most important for an understanding of the views of the last two centuries, closing with the present-day attitude.

Dr. C. MacFie Campbell discusses the definition or delimitation of the schizophrenic type of reaction, explaining the schizophrenic diagnosis and its implications, types and degrees of adaptive reactions, the significance of hallucinations, behavior and speech, somatic components, and variability of schizophrenic reaction.

Dr. A. A. Brill discusses the schizoid concept in the neuroses and psychoses, examining Freud's and Bleuler's views on the psychosis and types of reaction, the psychosexual maladjustments of schizoid individuals, and the schizoid category as including all neuroses.

Section II, Statistics

This study by Dr. Horatio M. Pollock deals with schizophrenic patients in hospitals and first admissions thereto, and makes no attempt to estimate the number of such patients living outside of hospitals. The data are derived principally from the Federal Census of institutions for mental diseases taken in January, 1923, and from the statistical records of the New York State Hospital Commission. This contribution represents an immense amount of labor, contains important tables and graphs, and sets forth the general drift of schizophrenic phenomena which statistics alone can furnish. The conclusions are: Schizophrenia occurs more frequently among males than among females; the onset occurs earlier in males than in females; it is more prevalent in cities than in rural districts; it is more prevalent among the foreign-born than among the native population in both city and country; it is relatively more frequent in some European races than in others; it is more prevalent among negroes than among whites.

Section III, Heredity and Constitution Including Personality

Dr. Albert M. Barrett discusses heredity relations in schizophrenia in which he concludes that heredity is an important factor to be considered in the etiology of schizophrenia. Abnormal character occurs more frequently among the antecedents and members of the families of schizophrenic patients than among those of any other form of psychosis. In relation to the Mendelian law it is indicated that the transmission of the factors for the creation of conditions leading to schizophrenia follows the course of a Mendelian recessive character, and the factors transmitted seem to be of complex rather than simple character. There is no certain evidence that the hereditary course in schizophrenia is in any way sex-linked. This study contains various tables and charts illustrative of the data. It must be

regarded as a very important contribution to the question of heredity in this connection, but should be critically considered.

Dr. A. Myerson discusses hereditary relationship of feeble-mindedness and schizophrenia.

Dr. T. Raphael, Dr. W. G. Ferguson and Olive M. Searle discuss constitutional factors in schizophrenia. It is a basal study of somatic manifestations, containing many tables of statistics and illustrative material.

Dr. George S. Amsden treats mental and emotional components of the personality in schizophrenia.

SECTION IV, SPECIAL ETIOLOGICAL CONSIDERATIONS: AFFECTIVE, TOXIC, INFECTIOUS

Dr. H. S. Sullivan discusses affective experience in early schizophrenia. Dr. R. H. Hutchings, C. O. Cheney and W. W. Wright make a contribution on psychogenic precipitating causes of schizophrenia. Dr. H. M. Adler discusses schizophrenic manifestations in prisoners. Dr. M. S. Gregory contributes a study on alcoholism and schizophrenia, in which in general he finds that alcohol plays an insignificant role in the disorder. Dr. K. A. Menninger discusses the schizophrenic syndrome as a product of acute infectious disease. Dr. S. E. Jelliffe contributes a study of the mental pictures in schizophrenia and in epidemic encephalitis, being one of the most extensive papers of the series.

SECTION V, INVESTIGATIVE ASPECTS

Dr. J. C. Whitehorn discusses the effect of glucose upon blood phosphates in schizophrenia. Dr. Karl M. Bowman discusses endocrine and biochemical studies in schizophrenia. Dr. George W. Henry contributes a study on gastro-intestinal motor functions in schizophrenia with Roentgenological observations. Dr. Hans C. Syz discusses psychogalvanic studies in schizophrenia. Dr. Marjorie Fulson contributes observations on the weight of the heart in schizophrenia and other mental disorders.

SECTION VI, LANGUAGE AND ART PRODUCTIONS

Dr. W. A. White discusses the language of schizophrenia and Dr. N. D. C. Lewis, graphic art productions in schizophrenia. Both of these papers are of interest to the layman as well as to the physician. The art products are quite astonishing.

SECTION VII, PATHOLOGY

Here is discussed the pathology of the brain in schizophrenia, by Dr. Charles B. Dunlap; lipoid degeneration products in the thalamus and globus pallidus in schizophrenia with a note on classification, by Dr. Walter

Freeman; histopathology of the endocrine organs in schizophrenia, by Dr. Bertram D. Lewin, containing several photogravures of the affected organs.

SECTION VIII, PROGNOSIS IN SCHIZOPHRENIA

This section is contributed by Dr. E. A. Strecker and Dr. G. F. Wiley.

SECTION IX, TREATMENT OF SCHIZOPHRENIA

The problem of treatment is covered by Dr. Samual W. Hamilton. From a practical standpoint this is naturally the most important theme discussed. Prophylaxis in many ways may cut down the amount of such mental trouble. Clinics for the examination of children and the cooperation of parents may do much. Continual parental discord, difficulties of sex life, choice and change of vocation or occupation must be given consideration. The conditions of excitement and apathy are discussed, and medical and surgical procedure considered, together with psychotherapeutic and social treatment. But the conclusion reached is, that any specific treatment, chemical, surgical, or psychological is apt to prove disappointing because the disease lacks specificity. Treatment including several lines of attack reaches and helps a large portion of the patients.

An interesting and valuable feature of the work is questions and discussions following the papers, bringing out crucial and mooted phases of the problems at issue.

GEORGE S. PAINTER,
New York State College.

The Unconscious. A Symposium. Edited by MRS. W. F. DUMMER. Alfred A. Knopf, New York.

These papers, each by a specialist eminent in his field, deal with the "synthetic tendency", the "integrative action", of the unconscious from the points of view of biology, psychology, psychiatry, sociology, and anthropology. The contributions to the symposium are: Dr. John B. Watson, Prof. Edward Sapir, Prof. W. I. Thomas, Dr. William A. White, Prof. C. M. Child, Dr. K. Koffka, Dr. John E. Anderson, Dr. Marion E. Kenworthy, and Dr. E. L. Wells. Of particular interest are the implications concerning the care and training of children from the standpoint of mental hygiene and the comprehension and, so far as may be, regulation of the individual in his unconscious mental processes.

An introduction is contributed by Mrs. Dummer. Professor Child of the University of Chicago contributes a study on the beginnings of unity and order in living things. He occupies the traditional evolutionary standpoint. The beginnings of unity and order in living things are not inherent in pro-

toplasm but are reactions to the external world which may leave records in the protoplasm. They represent the beginnings of organismic behavior and the foundations of all more highly specialized forms of behavior. In harmony with his view the notion teleology is discounted and the usual mechanical view supported.

Dr. Koffka's contribution from the standpoint of psychology involved his unique gestalt-theory. He holds that the evolution of thought is the opposite of the blind working of a mechanism of numberless associations. This has an analogy to the problems of general biology in that the law of the whole governs the parts, instead of the whole being determined and built up by the parts. The character of anything is a function of its position in a specific whole-process. Primary realities are possessed by the wholes whose parts they are.

Perhaps the most characteristic contribution is by Dr. Watson on the unconscious of the behaviorist. His thesis is that of verbalization as over against the vitalistic teaching of Freud and the psychoanalytic. We name our objects. The process by which we build up words is called "verbal conditioning." He calls that part of the individual's object world, which he constantly manipulates with his hands, feet, and body, but does not name —his situations and his responses to them which he does not give a word to —his "unconscious" world, or his unverbalized world, of which it is the greater part. He says the "unverbalized" of the behaviorist is a natural science substitute for the unconscious of the psychoanalyst. Emotions are gut reactions. He professes deep scepticism of the Freudian verbal catharsis notwithstanding it would seemingly be the very apotheosis of his verbalizing principle.

The point of his thesis is that verbal organization increases "control" over the environment and should be made dominant. The laryngeal segment is the repository of most of our social and ethical training. The very existence of ethics hinges upon the extent to which the child can be verbally organized.

Watson says the behaviorist finds no mind in his laboratory—sees it nowhere in his subjects. He would therefore be unscientific if he lingered by the wayside and idly speculated on it. There is no observable entity called mind, therefore there can be no such thing as consciousness and its subdivisions. There can be no festering spot in the substratum of the mind, as assumed by Freud, that is, in the unconscious because there is no mind and no consciousness.

Of the unintelligentia of the age, Watson takes first prize. He is compelled constantly to put commonly accepted words in quotation marks to indicate his reluctant tribute to stupid custom. He apothesizes verbalization in most senseless fashion. Words are of significance only as symbols of ideas

or meanings; but meanings and significant content of words implies an intelligence which *knows* them as meanings. He suggests Shakespeare's actors who were given to mouthing words, words, words, only. Watson calls such an account of behaviorism "science," which means knowledge, yet there is no mind nor anything intelligent to know. It is difficult to see any difference between a parrot or a phonograph that is "conditioned" verbally and a human automaton.

GEORGE S. PAINTER,
New York State College.

A Guide for Diabetics. By WALTER R. CAMPBELL, M. D., and MAME T. PORTER, B. Sc. 259 pages, illustrated. The Williams and Wilkins Company, Baltimore, Md.

As the authors point out, the successful treatment of diabetes mellitus is dependent on the cooperation of the patient and the physician. The purpose of this Guide is to give the patient the information essential to intelligent action on his part and to furnish him recipes for the preparation of foods suitable for his use. The discussions are brief, but all directions are clear and accurate. Among the important topics treated are: The nature and cause of diabetes, food principles, dietetic treatment, insulin, infections, hygiene, etc. The whole work gives evidence of being carefully prepared and it admirably fulfills its purpose.

POLLOCK.

THE MINNEAPOLIS MEETING OF THE AMERICAN PSYCHIATRIC ASSOCIATION

Those who were fortunate enough to attend the annual meeting of the American Psychiatric Association in Minneapolis June 4 to 8, 1928, pronounced it a very enjoyable convention. Other meetings have been larger and perhaps some have had more inspiring programs; but on the whole few meetings have yielded more enjoyment or given more satisfaction to the members in attendance. The total registration of members and guests was 311.

Minneapolis and St. Paul are beautiful cities and the country round about with its fertile farms and numerous lakes has exceptional charm. The local committee under the leadership of Dr. Joseph C. Michael of Minneapolis made elaborate provisions for the comfort and entertainment of the delegates and their wives. The visit to the Washburn-Crosby Company and the delicious luncheon served by the Gold Medal girls will be long remembered. The varieties of machinery and processes used in the production of flour were quite bewildering even to psychiatrists. The auto tours and the visits to the Mayo Clinic and the Rochester State Hospital were keenly enjoyed by many members and guests.

The annual address by Dean Roscoe Pound on developments in the legal field proved of exceptional interest. The folk dancing and buffet supper that followed were delightfully informal.

The literary sessions ran along in the usual manner. Dr. Adolf Meyer in the president's chair was an inspiration to all. His address was a remarkable review of the development of psychiatry in this country during the past 40 years. A gratifying feature of the program was the large number of papers presenting the results of careful research work.

Several important reports were submitted to the meeting. The report of the Committee on Statistics presented by Dr. E. Stanley Abbott, called attention to the effective work being done by the Federal Census Bureau in the collection and dissemination of annual statistical data pertaining to the institutions for mental disease. The committee announced the adoption of a new statistical system for institutions for epileptics which had been prepared by the special Committee on Statistics of the Section on Convulsive

Disorders. The report referred to the recent census of hospitals in the United States made by the American Medical Association and emphasized the need of more adequate recognition of psychiatry by such association.

The report of the Committee on Medical Service which was presented by Dr. C. O. Cheney referred to the large number of vacancies now existing in hospitals for mental disease and discussed ways and means of filling them. It was suggested that a larger number of State hospitals might meet the requirements of the Council on Medical Education and hospitals of the American Medical Association for approval for psychiatric interneships. If this were done, naturally a larger number of medical students would take up work in mental hospitals. The committee expressed its approval of the extended use of occupational therapy in mental hospitals and called attention to the necessity of keeping this branch of treatment under the direction of the hospital physicians. The development of social work in mental hospitals was discussed, and it was suggested that schools for psychiatric social workers might be established in one or more state hospitals in each of the larger states.

The officers and councilors elected to serve the association during the coming year were as follows:

Samuel T. Orton, M. D., President, Columbus, O.

Earl D. Bond, M. D., Vice-President, Philadelphia, Pa.

Robert L. Dixon, M. D., Hon. Vice-President, Wahjamega, Mich.

Clarence O. Cheney, M. D., Secretary-Treasurer, Poughkeepsie, N. Y.

COUNCILORS

For three years

Adolf Meyer, M. D.....Baltimore, Md.
Henry I. Klopp, M. D.....Allentown, Pa.
Arthur F. Kilbourne, M. D.....Rochester, Minn.
Ross McC. Chapman, M. D.....Towson, Md.

For two years

B. M. Hodskins, M. D.....Palmer, Mass.
H. D. Singer, M. D.....Chicago, Ill.
George M. Kline, M. D.....Boston, Mass.
Thomas A. Ratliff, M. D.....Cincinnati, O.

For one year

C. Floyd Haviland, M. D.....New York, N. Y.
Forrest C. Tyson, M. D.....Augusta, Me.
A. W. Guest, M. D.....Jamestown, N. D.
L. Vernon Briggs, M. D.....Boston, Mass.

HOW PSYCHIATRY MAY AID THE COURTS

Dr. Sanger Brown II, in an address on "A Psychiatric View of Crime and the Criminal" at the meeting of the American Psychiatric Association for the Study of the Feebleminded held at Atlantic City, May 31, 1928, gave some important suggestions as to the aid psychiatry could render to the courts in the proper disposal of convicted persons. The following is an abstract from the address:

"Can psychiatry work out a constructive program in the field of criminology? I believe that it can, not because psychiatry is a cure-all, but because criminology belongs in this particular field to a much greater extent than most people realize.

Granting that psychiatry is given an opportunity to contribute toward the solution of the problem of crime, what would be the program?

"To discuss concrete situations, let us consider the case of an imaginary offender. If John Doe, a hitherto unknown quantity, is convicted of a crime, would not the following psychiatric procedure be necessary before sentence is pronounced?

"Since John Doe committed a crime, whether theft, arson, murder or some other offense, we would begin by assuming that his unusual act was an indication of some variation in normal mental functioning. He, therefore, should be the subject of thorough psychiatric study.

"Sentence should be deferred. The judge should not be free to sentence him without a certificate of complete examination, any more than a judge can send a suspected case of mental disease or defect to an institution without a certificate of mental examination. We would, therefore, place a psychiatrist at work on the case. He would get a history of the offender's past life, his former offenses, if any, his habits, character, conduct, in fact everything about him. He would study him not only in respect to the present charge, but in relation to his life as a whole. This report would be handed to the judge.

"Various facts would be revealed by this examination. It might be found that John Doe was simply a malefactor, deliberate in his attempt to prey upon mankind and to beat the law. If such were the case, the judge should know it and would doubtless make a definite and appropriate sentence.

"On the other hand, it might be that John Doe had led an exemplary life, that this was his first and only offense, that there were a good many extenuating circumstances. The judge in this case might prefer to place him on probation and give him an opportunity to make restitution for what he had done.

"John Doe might be another type of man, a psychopath. If he is such a type, the disposition of his case might be very different. The judge should send him for an indefinite period to an institution, the length of his stay to be determined by further study of his case.

"Again, John Doe might be mentally defective or mentally deranged and then the judge would wish to send him to an institution for care and treatment.

"Would not the complete psychiatric examination in the hands of the judge be a valuable aid to him in deciding what should be done with John Doe?"

TREE PLANTING IN MEMORY OF DR. ISHAM G. HARRIS

On April 19, 1928, a short ceremony was held at the Brooklyn State Hospital in connection with the planting of two magnolia trees in front of the entrance to the reception building. The trees were donated by the Nurses' Alumni Association and the present nursing service in memory of the late Dr. I. G. Harris, superintendent of the Brooklyn State Hospital. The exercises were opened by prayer by the Rev. Alexander Wouters, after which an address was made by Hon. Hugo Hirsh, president of the Board of Visitors. The actual planting of the trees then followed. The Board of Visitors was represented by Messrs. Hirsh and Thatcher and Dr. Byrne. Among others present were Dr. Pilcher, consulting surgeon at the hospital, who was also Dr. Harris' personal physician. Mrs. George Stark, Dr. Harris' daughter, also attended. Physicians and nurses of the hospital were present as far as their duties would permit.

HIDEYO NOGUCHI

Dr. Hideyo Noguchi, eminent bacteriologist and research worker of the staff of the Rockefeller Institute, who died in Accra, West Africa, May 21, 1928, left behind him a remarkable record of achievement in a most difficult field. The attention of psychiatrists was called to Dr. Noguchi's work when in 1913 he discovered the germ of syphilis in sections made from the brains of patients who had died from general paralysis. The sections had been prepared by Dr. Joseph W. Moore, who was then on the staff of the Central Islip State Hospital. This important discovery brought to an end the long controversy as to the relation of syphilis to general paralysis and prepared the way for the prevention as well as the better treatment of this dread disease.

Other important achievements of Noguchi were: Introduction of a bacteria-free vaccine for smallpox; development of preventive vaccine and curative serum for yellow fever; cultivation of causative micro-organisms of infantile paralysis and rabies. Just prior to his fatal illness he had been studying African yellow fever for the Rockefeller Foundation to which he was loaned by the Rockefeller Institute. He was about to return to this country when he was stricken with the disease he was hoping to control.

NOTES

—Dr. Oscar C. Willhite has been appointed chief of the Neuropsychiatric Division of the United States Veterans' Bureau at Washington, D. C., to succeed Dr. R. L. M. Wilbor.

—Dr. John F. Louden, who for several years had been proprietor of Louden-Knickerbocker Hall at Amityville, L. I., died at the institution May 22 1928. His son, John F. Louden, will succeed him as proprietor of the institution.

—Colonies for the care of mental patients who are physically in good condition have recently been established by Middletown, Harlem Valley and Binghamton State Hospitals. Each colony is located on a farm and the patients will occupy a large farm house, the number accommodated in each house being from 20 to 30. If these colonies prove successful it is expected that many others will be established.

—Dr. Arthur L. Shaw, Utica, N. Y., specialist in epilepsy, and former member of the medical staff of Craig Colony, died at his home May 27, 1928, of diabetes. Dr. Shaw was secretary on the section on convulsive disorders of the American Psychiatric Association and was to have presented a paper at the Minneapolis meeting on "The Therapeutics of Convulsive Disorders."

—Dr. Douglas A. Thom, director of the division of mental hygiene of the Massachusetts Department of Mental Diseases, a former member of the staff of the National Committee for Mental Hygiene, has received a medal awarded by "Children, the Magazine for Parents" for his book, "Every-day Problems of the Every-day Child," published by D. Appleton and Company in 1927.

—Dr. John D. McCarthy, head of the Department of Hygiene of DeWitt Clinton High School in New York City and a pioneer in mental-hygiene work in the field of secondary education, has been appointed director of health education for the public schools of New York City. He graduated from Harvard Medical School in 1913 and holds the degree of Ph. D. from New York University.

—The U. S. Veterans' Bureau has announced new appointments of medical officers in charge of the U. S. Veterans' hospitals as follows:

Dr. Richard W. Soper at Augusta, Georgia.
Dr. Wm. M. Dobson at Bedford, Mass.
Dr. Matthew Baines at Bronx, N. Y.
Dr. Harry R. Carson at Sheridan, Wyoming.
Dr. Wm M. Dobson at West Roxbury, Mass.

—Summer schools will be conducted by the Rome State School and the Syracuse State School at the respective institutions July 2 to August 10, 1928. The school at Rome will present courses on special class teaching, abnormal psychology, introduction to social case work, and technique of mental testing. The courses at Syracuse will include methods for special class teachers, methods of teaching industrial arts, mental hygiene of childhood, psychology of the mentally handicapped child, methods of teaching mentally handicapped children and psychometric testing.

—The Committee on Institutional Statistics of the American Statistical Association has inaugurated a movement to establish uniform systems of records and statistics of public welfare activities, organizations and institutions throughout the country. The committee will first make a study of the welfare laws of the various states; when such study is completed, a model State law will be drafted to provide for the collection and reporting of welfare statistics. The committee will also undertake to plan standard statistical systems for those welfare agencies that have not yet adopted uniform systems.

—Dr. Russell E. Blaisdell, first assistant physician, Kings Park State Hospital, was on April 24, 1928, designated by Commissioner Parsons as deputy medical inspector for an indefinite period beginning May 1, 1928. He retains his family home at the Kings Park State Hospital.

Dr. Blaisdell entered the State hospital service as clinical assistant at Kings Park State Hospital on June 29, 1906, having received his degree from the Baltimore Medical College that year. He was appointed medical interne on August 15, 1906, and advanced through the grades to the position of first assistant physician to which he was appointed on December 1, 1917. He is a member of the American Medical Association, American Psychiatric Association and New York Academy of Medicine.

—Dr. Donald W. Cohen was appointed by Commissioner Parsons assistant psychiatrist of the Department on June 11, 1928. He received a provisional appointment to this position in November, 1927. Dr. Cohen stood No. 1 on the civil service list recently established for the position.

Dr. Cohen received his medical degree from the Buffalo Medical College in 1923. He took a six weeks' post-graduate course at the New York Psychiatric Institute, Ward's Island in neuro-psychiatry in 1927. He held an interneship including one month of psychiatric work at the Buffalo City Hospital from July 1, 1923 to July 1, 1924, and was resident physician at that institution in charge of the psychiatric ward for two years, from July 1, 1924 to July 1, 1926. He was assistant physician at Buffalo State Hospital from July 1, 1927 until he entered the State service last November.

—Lewis M. Farrington, secretary of the State Department of Mental Hygiene, was honored by the staff of the Albany office on the occasion of his fiftieth birthday, Thursday, May 17, 1928. When he arrived at his office, he found fifty roses on his desk and received the hearty congratulations of Commissioner Frederick W. Parsons and his assistants in the office. Mr. Farrington has been in the State service for nearly a quarter of a century. In January, 1905, he was appointed stenographer to Manhattan State Hospital and served in this position for six years. In 1911 he was transferred to the Albany office of the old State Commission in Lunacy which later became the State Hospital Commission and within a year, was promoted to the position of assistant secretary. In this position he had the benefit of associating with Mr. Timothy E. McGarr who had been secretary since the organization of the Department in 1889. In 1921, Mr. Farrington was appointed secretary of the State Hospital Commission which position he continues to hold in the Department of Mental Hygiene.

—In accordance with a proclamation issued by Lieutenant Governor Edwin Corning, the institutions in the Department of Mental Hygiene celebrated on Saturday, May 12, 1928, the 108th anniversary of the birth of Florence Nightingale who accomplished so much in the development of nursing and hospital practice. Each institution kept "open house" and through the local press, invited interested persons to visit and inspect the institution.

—A study of cases of delinquency, psychosis and psychoneuroses by Dr. Herman M. Adler and Dr. J. A. Larson, reported in the January-March issue of the Journal of Abnormal and Social Psychology, indicates that the attempt to deceive another person is accompanied by changes in the pulse rate, blood pressure and respiration, but that self-deception precludes such changes.

—The five-year program of the Committee on the Cost of Medical Care which was adopted February 13, 1928, has been printed and distributed by Dr. Ray Lyman Wilbur, Chairman. Dr. Wilbur is president of Standford University and is a brother of the Hon. Curtis D. Wilbur, Secretary of the Navy. Dr. Wilbur said that with the aid of various cooperating agencies, the committee until July 1, 1932, will be studying the cost and adequacy of medical care, the expense to the community of hospitals and clinics and the return accruing to the physician, the dentist, the nurse and other agents. For five years, the committee will be engaged in seeking facts. After the facts become available, they will be published in a series of reports. Later, there will be issued a summary together with recommendations, the latter to be based not on opinions, but on the facts.

—The concrete tank with a capacity of four million gallons of water now under construction at the Rome State School, is said to be the largest concrete reservoir in the country. It is to be used in conjunction with the tank in the large water tower now used by the institution. The tank is to be 185 feet in length and the same in width and will be 16 feet deep, giving it a total area of 547,600 cubic feet. It will be operated by a specially built pump house. The cost of the new tank will be approximately $72,000.

—The replacement of the entire electrical construction at the St. Lawrence State Hospital, Ogdensburg, N. Y., will be undertaken shortly, at a cost of between $100,000 and $200,000. The work is said to be the largest of the kind ever undertaken in northern New York and will give employment to a large force of electricians. Next spring, it is expected the work will be started on the construction of a new nurses' home at St. Lawrence which it is estimated will cost approximately $400,000.

—Cornerstones of four buildings at Letchworth Village were laid by Commissioner Bird S. Coler on May 9, 1928. The new structures will include a service building, two dormitories, and an attendants' home in the fifth unit of a six-unit institution which will eventually accommodate 3,500 inmates.

Judge Mortimer B. Patterson, president of the Board of Visitors, presided and addresses were made by Mr. Coler and Dr. Little, superintendent of the institution.

The new group of buildings, which will cost about $750,000, are being erected from the proceeds of the $50,000,000 bond issue.

—Believing, as psychiatrists do, that much juvenile delinquency and crime can be prevented by early treatment of anti-social trends and behavior problems in childhood, Judge Alva L. Deal of the Probate Court of Stark County, Canton, Ohio, has begun the organization of a clinical service based upon accepted mental hygiene principles and practices. He has established the first of what he hopes will be a chain of clinics attached to the criminal juvenile courts in Ohio. The present clinic will be operated under the direction of Dr. Arthur H. G. Hyde, superintendent of the Massillon State Hospital.

—The subject of mental health seems to be the next big field of conquest for social welfare forces, was the opinion expressed in an address delivered to the National Conference of Social Work, held at Memphis, Tenn., early in May by its president, Sherman C. Kingsley. Opening the meeting, President Kingsley said: "We are told that more than 10,000 persons a year are being added to the permanent population of institutions which afford custodial care for mental patients. The outstanding authorities declare that restoration to usefulness and a place in society can be effected on much the same scale that has been achieved with tuberculosis and that much the same process and approach is needed."

—In a special report by the subcommittee on medical aspects of crime made public June 3 by the National Crime Commission, it was recommended that the legal procedure in criminal trials be altered so that juries would not pass on the mental responsibility of accused persons. Newton D. Baker, ex-Secretary of War in President Wilson's cabinet, and chairman of the National Crime Commission, said in an introduction to the committee's report, that the bewildering effect of contradictory expert testimony and the unaccountable effect of the sympathies of the jurors on verdicts recently rendered in cases in which insanity was set up as a defense, was responsible for the attention given the matter by the subcommittee at this time. The committee referred to the trial of George Remus, in Cincinnati, as a recent example.

A VICIOUS CIRCLE

and the proper point for its attack

IS CONSTIPATION a cause or an effect? This question is occupying much attention among physicians today, for constipation and all the symptoms surrounding it continue to occupy as large a place as ever in human life and in the doctor's daily practice.

"Constipation is like a headache," argues one authority, "simply a symptom of some underlying physical error or improper habit of personal hygiene." Worry, inadequate exercise, faulty eating habits, or the habitual use of laxative drugs —these are all influences which produce intestinal impairment.

But if constipation is an effect, it is also a cause. It often causes indigestion, heartburn, bad taste, acid eructations, suppurative diseases of the skin. Careful investigators have concluded that chronic cases of constipation almost invariably produce serious affections of the nervous system — irritability, headache, insomnia, melancholia and what perhaps might be termed *mental* stasis.

CAUSE and effect—action and reaction—a vicious circle. Somewhere the physician must step in and break it up. The authorities cited above point out that thorough investigation of the intestinal tract is essential. The treatment for constipation, they assert, is often all that is required to correct neurasthenic conditions—"A proper hygiene and therapy of the intestinal tract will often be the deciding factor in differential diagnosis."

For a laxative that does its work easily and naturally many physicians recommend fresh yeast.

Yeast has these advantages: It tends to soften the fecal masses and to increase their bulk and moisture. It diminishes putrefaction and gently stimulates the bowel muscle to perform its function—precisely opposite to the effect of cathartics.

WHILE investigation has shown, in the words of one authority, "that intestinal antiseptics diminish the ability of the intestine to destroy bacteria" the action of fresh yeast is just the contrary. Eaten daily in sufficient quantity, yeast combats the development of hostile types of bacteria in the intestine.

The action of yeast in increasing the number of white cells in the blood accounts for greater resistance and the well known efficiency of yeast in the treatment of acne, boils and other skin diseases.

Physicians usually suggest three cakes daily, one before each meal or between meals. Yeast may be eaten just plain or suspended in milk or water—hot or cold—or any other way the patient prefers. For constipation it is most effective when dissolved in hot (not scalding) water, one cake before each meal and at bedtime.

A copy of the latest brochure on yeast therapy containing a bibliography of articles and references on the subject will gladly be mailed on your request. The Fleischmann Company, Dept. 327, 701 Washington St., New York City.